

**EXTENT OF CONTAMINATION REPORT
FOR THE
HARCO PROPERTY SITE
WILTON, CONNECTICUT
MARCH 1992**

Prepared For:

**U.S Environmental Protection Agency
Region I
60 Westview Street
Lexington, Massachusetts 02173**

CONTRACT NO. 68-W0-0036

TAT-01-N-01084

TDD NO. 01-9201-01D

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Technical Assistance Team
Region I**

June 1992



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TABLE OF CONTENTS

	<u>PAGE</u>
List of Figures	iii
List of Tables	iv
List of Appendices	v
1.0 Objectives	1
2.0 Site Background Information	1
3.0 Site History	1
4.0 Extent of Contamination Survey	4
4.1 Sample Grid Points and Quadrants	5
4.2 Site Screening	8
4.3 Surface Sample Analyses	8
4.4 Subsurface Sample Analyses	12
4.5 Soil Confirmation Sample Analyses	12
4.6 Aqueous Sample Analyses	18
4.7 Waste Disposal Samples	18
4.8 Site Observations	18
4.9 Previous EPA Site Visits	23
5.0 Preliminary Findings	23
5.1 Soil Contamination Summary	23
5.2 Aqueous Contamination Summary	29
5.3 Estimated Volume of Contaminated Soil	29
5.4 Preliminary Treatment and Cleanup Options	29
5.5 Summary	31

LIST OF FIGURES

	<u>PAGE</u>
Figure 1 - Site Location Map	2
Figure 2 - Site Diagram	3
Figure 3 - Grid Control Points	6
Figure 4 - Site Sampling Grid	7
Figure 5 - Soil Sample Locations	13
Figure 6 - Aqueous Sample Locations	19
Figure 7 - Previous Site Visits Sampling Locations	24
Figure 8 - Contour Map of the Lead Contamination	30

LIST OF TABLES

	<u>PAGE</u>
Table 1 - Conductivity Meter Readings	9
Table 2 - Magnetometer Readings	10
Table 3 - XRF Surface Soil Results	11
Table 4 - Sub-Surface Soil Conditions	14
Table 5 - XRF Sub-Surface Soil Results	16
Table 6 - NERL Analytical Results on the Soil Samples	17
Table 7 - NERL Analytical Results on the Aqueous Samples	20
Table 8 - TCLP Results	22
Table 9 - NERL Analytical Results on September 1990 Samples	25
Table 10 - NERL Analytical Results on January 1990 Samples	26
Table 11 - Summary of Results	27

LIST OF APPENDICES

- Appendix A - Sampling Quality Assurance/Quality Control Plan**
- Appendix B - Health and Safety Plan**
- Appendix C - Site Sign-in Sheet**
- Appendix D - XMET XRF Results**
- Appendix E - SEFA-P XRF Results**
- Appendix F - Chain-of-Custody Records**
- Appendix G - Sample Cards**
- Appendix H - Sample Release Cards**
- Appendix I - NERL Analytical Report on March 1992 Samples**
- Appendix J - Laboratory Resources, Inc. Report on TCLP Samples**
- Appendix K - Photodocumentation Log**
- Appendix L - NERL Analytical Report on September 1990 Samples**
- Appendix M - NERL Analytical Report on January 1992 Samples**

1.0 OBJECTIVES

The U.S. Environmental Protection Agency, Emergency Planning and Response Branch (EPA EPRB) and the Roy F. Weston, Inc. Technical Assistance Team (TAT) conducted a sampling survey at the Harco Property Site (Site) in Wilton, Fairfield County, Connecticut to determine the extent of contamination. The survey was performed from March 30, 1992 thru April 1, 1992. The sampling survey included setting up a sampling grid system, followed by the collection of water samples for metals analysis, soil samples for field screening for lead and zinc, and confirmatory soil samples for lead and zinc. Samples were also collected for waste characterization and disposal analysis. TAT developed the sampling QA/QC plan (see Appendix A) to determine the number and types of samples that would be collected to define the extent of soil contamination at the site. TAT also prepared a health and safety plan (see Appendix B). The findings of this survey are to be used to define the extent of contamination and to determine the appropriate methods to mitigate the potential threats posed by the contamination at the site.

2.0 SITE BACKGROUND INFORMATION

The Site is located 15 miles south of Danbury, Connecticut on a 40-acre wooded lot off of Old Mill Road in Wilton, CT, (see Figure 1 - Site Location Map). The Site is identified on tax map #10, R-2, lot #12 in the Town of Wilton, Assessor's Office. The property is also referenced in book 616, page 27 at the Town Clerks Office.

The Site is only accessed from Old Mill Road by a dirt road which branches off into several old access roads. The area of concern is a clearing of approximately two acres. The north and east sections of this clearing are covered by shrubs and bushes and include several small wetland areas. A stream flows along the northwest corner of the property (see Figure 2 - Site Diagram). The Norwalk River is located within a quarter mile of the Site. There are about twenty residences within a quarter mile radius of the Site and one house is located along the access road at the edge of the property.

3.0 SITE HISTORY

The Site was owned by Peter P. Harco from 1966 to 1987. In November 1970, the State of Connecticut Water Resources Commission and the Town of Wilton Planning and Zoning Commission granted a permit to the Gilbert and Bennett Manufacturing Company to dispose of 800 cubic yards of dried iron oxide, lime, and calcium sulfate on the ground surface at the Harco Property without treatment. The permit period was approved for a duration of six months.

The sludge was landfilled within a 2-acre area to a depth of 3 feet. It was then covered with existing stock-piled gravel. Based on file review, the actual length of time, and the amount and type of solid waste brought in are unknown.

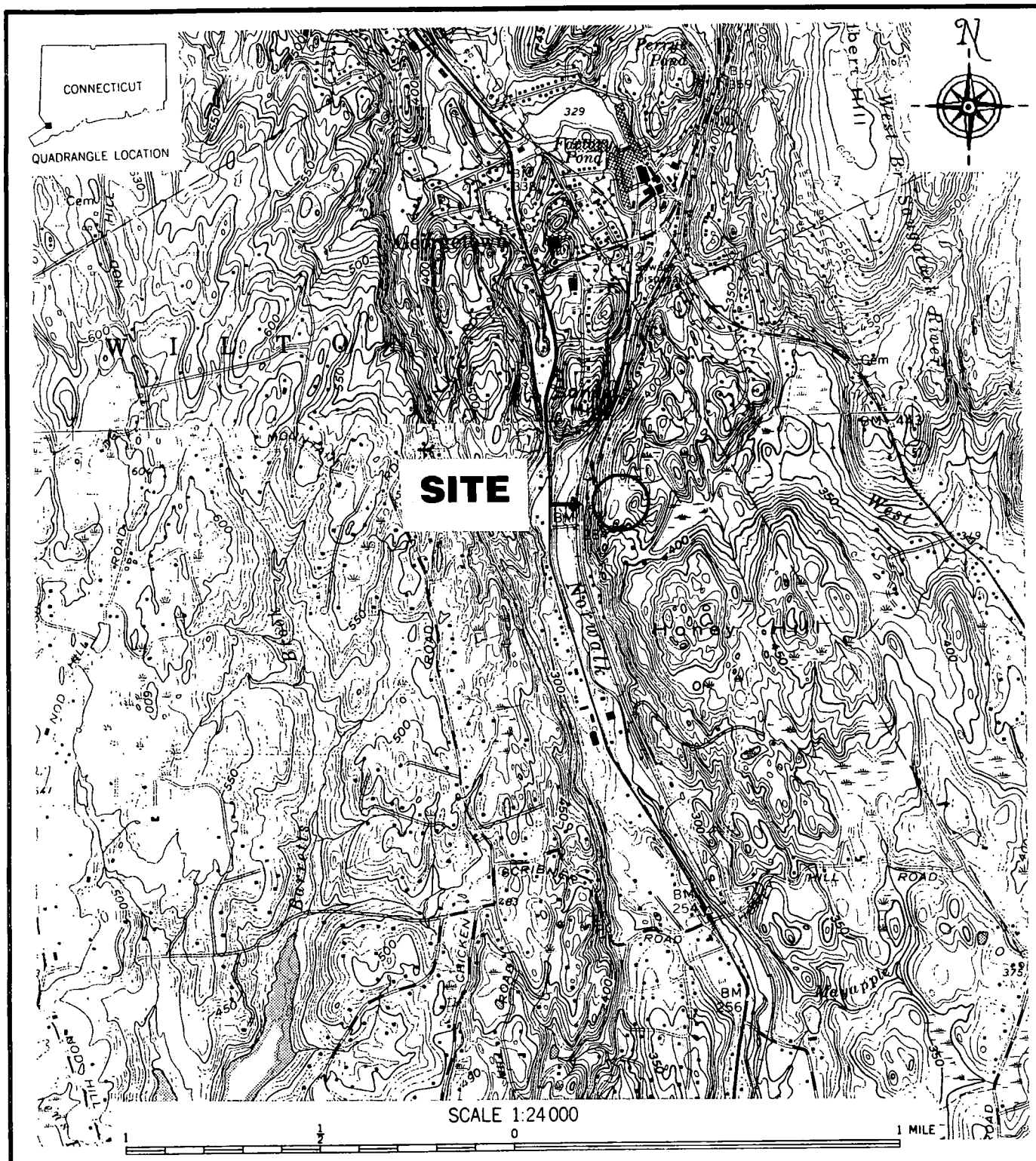


FIGURE 1
SITE LOCATION MAP
EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

Norwalk North, CT and Bethel, CT Quadrangles
 USGS 7.5 Series, Topographic Maps
 Norwalk North, CT Quadrangle Photorevised 1971
 Bethel, CT Quadrangle Photorevised 1984

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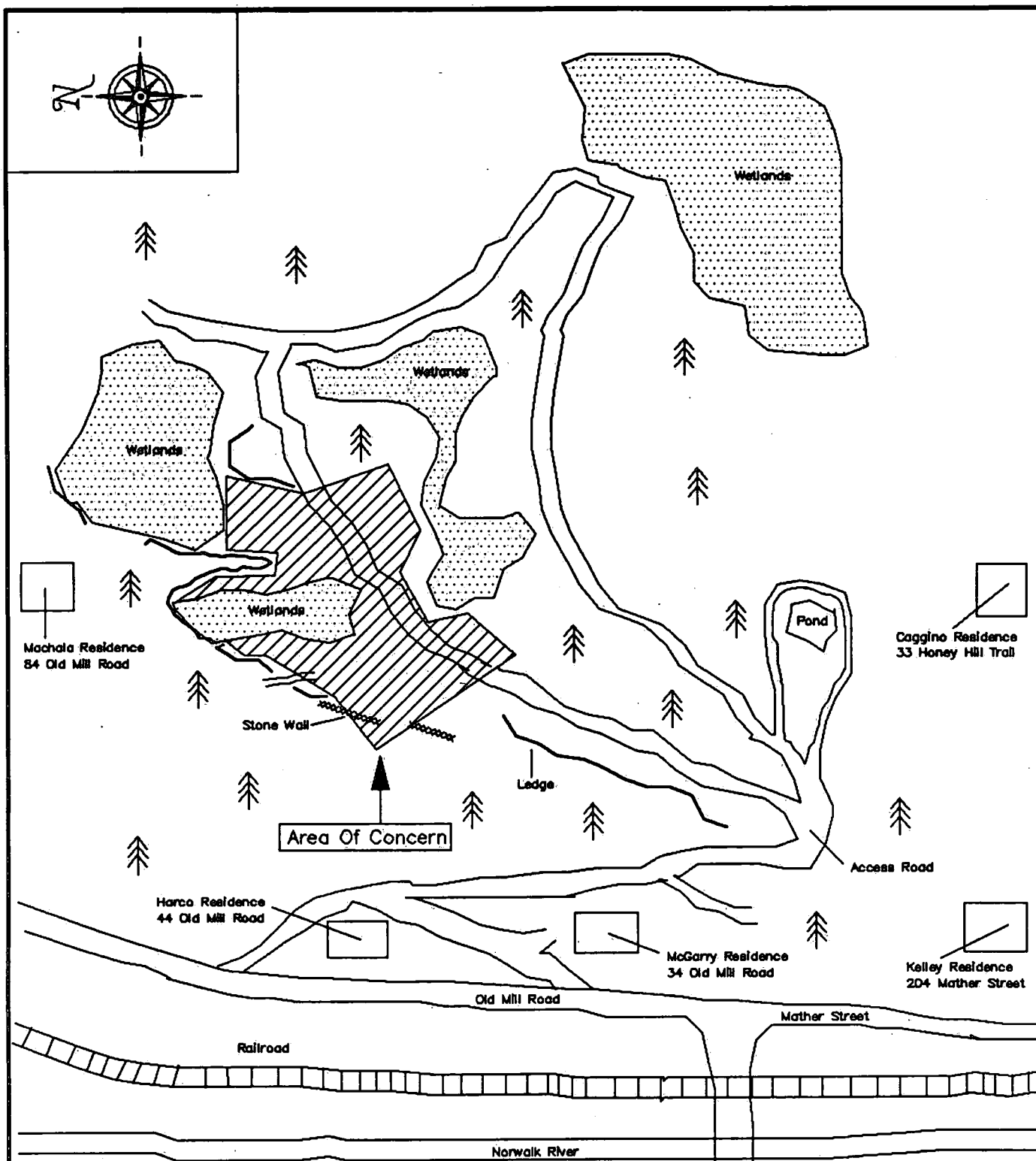


FIGURE 2
SITE DIAGRAM
EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

NO SCALE

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On July 17, 1979, a site inspection by state and local health officials was made at the request of Mr. Paul Lauer, who was interested in developing the land. In a letter dated July 20, 1979, the state recommended that an extensive and a detailed study be performed in the area for potential pollution problems before any site plan for development would be approved.

On January 17, 1986 the Town of Wilton planning and Zoning Commission replied to a request from G&D Construction, Inc. and Peter Harco for an 11 lot subdivision. It was the opinion of the Conservation Commission that the site has been used as a repository for various types of solid waste and the waste materials should be removed immediately and disposed of in an environmentally sound manner. Subsequent aerial photographs taken in 1968, 1974, and in 1985 suggest incremental enlargement and expansion of dumping activities beyond those permitted by the state.

On April 30, 1987, Costa Stergue purchased the 41-acre property from Florence Harco, estate beneficiary to the late Peter Harco. On June 9, 1989, a letter from the State of Connecticut Department of Environmental Protection (CT DEP) was sent to Dominick Burke, attorney representing Costa Stergue. The letter stated that if the property was to be developed for residential use, the sludge must be removed, as it was a potential source of contamination, and that an evaluation of the extent of contamination must be conducted.

On September 25, 1990, EPA EPRB initiated a Removal Site Evaluation in response to a July 13, 1990, inquiry from U.S. Senator Joseph I. Lieberman. The removal site evaluation consisted of a preliminary assessment/site investigation (PA/SI) in accordance with section 300.400 of the National Contingency Plan (NCP). The removal site evaluation has led to the determination that a removal action is appropriate at this time due to, but not limited to, the high concentrations of lead in the soil at the Site.

4.0 EXTENT OF CONTAMINATION SURVEY

The extent of contamination survey for the Harco Property Site was conducted by the EPA EPRB and TAT during the week of March 30, 1992. The extent of contamination survey consisted of the following activities:

- Establishing a sampling grid using survey equipment, compass, and tape,
- Evaluating the sub-surface environment using the Geonics LTD. EM-31-D Non-Contacting Terrain Conductivity Meter (EM-31) and the EG+G Proton Precession G-856 Magnetometer (Magnetometer) at each of the grid points,
- Establishing surface lead and zinc concentrations in the field using the Outokumpu XMET 880 X-Ray Fluorescence (XRF) Analyzer (XMET),
- Determining the subsurface soil conditions (e.g., soil type, groundwater level, and depth) with sample borings,

- Collecting subsurface composite soil samples for analysis of lead and zinc using the XMET and the HNU Systems, Inc. SEFA-P X-Ray Fluorescence (XRF) Analyzer (SEFA-P),
- Collecting subsurface composite soil samples for confirmation analysis at the EPA New England Regional Laboratory (NERL) in Lexington, Massachusetts,
- Collecting surface water, breakout water, and drinking water samples for metal analyses at NERL, to determine health and environmental threats,
- Collecting composite soil samples for waste characterization/disposal analysis to be analyzed by Laboratory Resources, Inc., in Brooklyn, Connecticut (a laboratory, subcontracted by TAT),
- observing existing site conditions.

In addition, analytical data from previous site visits were evaluated in this report. Present during the survey were the OSC and TAT members, and personnel from the U.S. EPA Environmental Response Team (ERT), the CT DEP, the Town of Wilton, and the property owner. A sign-in sheet was maintained for all personnel who entered the site and is included in Appendix C.

4.1 Sampling Grid Points and Quadrants

The sampling grid was established by first creating a baseline that crossed the length of the clearing. Next, several additional lines were added extending at 90° angles until they reached the edge of the clearing. These were the Grid Control Points (see Figure 3 - Grid Control Points). The sampling grid was then developed by placing lines perpendicular to the baseline at 50-foot intervals, starting from the westernmost grid control point (EW 5 of Figure 3). The grid points were marked with survey pin flags, and extended from both sides of the baseline at 50-foot intervals along the perpendicular lines (see Figure 4 - Site Sampling Grid). Grid points were identified by their location from the baseline (e.g. grid point 1+50, 100N is located 100 feet north of a point on the baseline that is 150 feet from point EW 5). Finally, quadrants were established by connecting four grid points, and were identified by the southeast grid point (e.g. Quadrant 1+00, 50S is made from the four grid points 1+00, 50S; 1+00, 00; 0+50, 00; and 0+50, 50S).

Grid Control Points SETUP PT A and BM 1 are permanent markers, and were left to enable reproduction of the baseline and grid points. To recreate the baseline, draw a line between these two Grid Control Points, then turn 140° on SETUP PT A and go 64 feet to Grid Control Point EW 1. Set up on point EW 1, then turn 52° from SETUP PT A, to establish the baseline. The other Grid Control Points can be recreated from the distances listed in Figure 3.

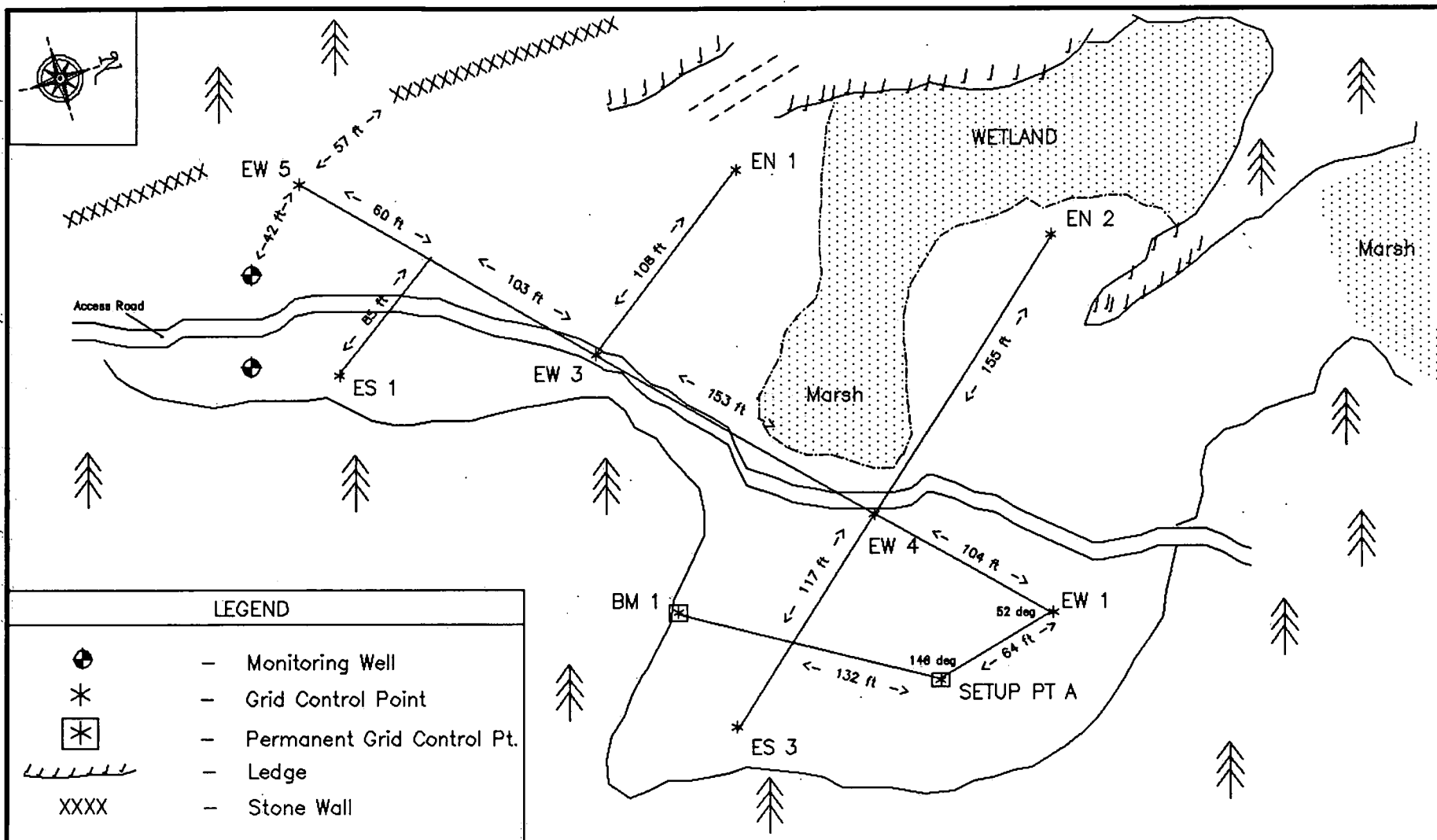


FIGURE 3
GRID CONTROL POINTS
MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

NO SCALE

WESTON
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 REGION 1 TECHNICAL ASSISTANCE TEAM

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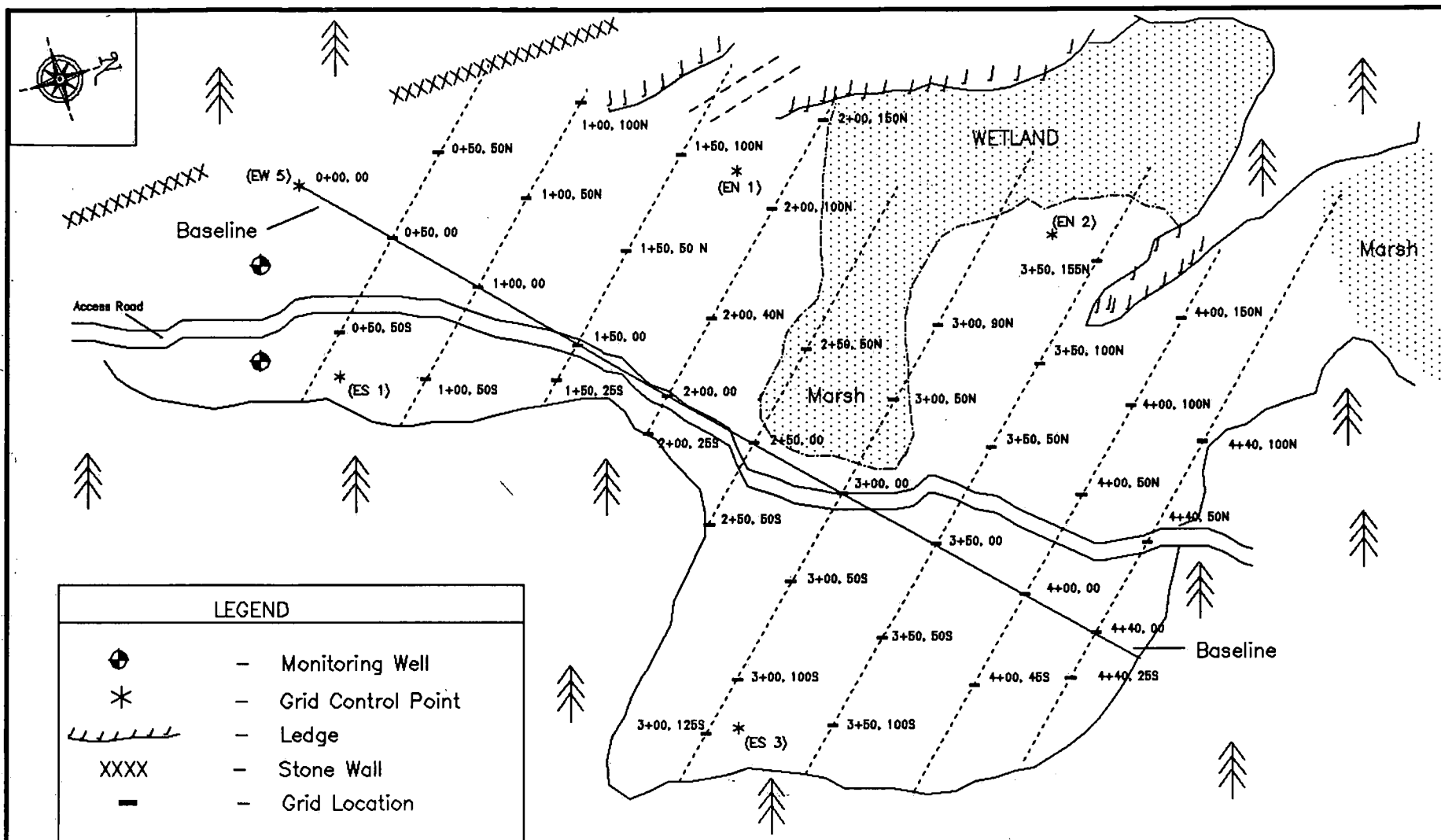


FIGURE 4
 SITE SAMPLING GRID
 MARCH 1992 EXTENT OF CONTAMINATION SURVEY
 HARCO PROPERTY SITE
 WILTON, CONNECTICUT

NO SCALE

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4.2 Site Screening

The EM-31 is an instrument used primarily to determine the presence of buried drums. The method is a geophysical technique based on the physical principles of inducing and detecting electrical current flow within geologic strata. The instrument operates by radiating an electromagnetic field with a transmitter coil into the subsurface materials which induce eddy current loops in the magnitude of the current flowing within those loops, and are partially detected on a receiver coil. The receiver coil generates an output voltage which is generally linearly related to subsurface conductivity. The results are interpreted by looking for either a significant change (greater than 10 units) between the north-south reading and the east-west reading (instrument orientation), or looking for trends (change from low to high readings). The EM-31 was used at each of the grid points and a few locations between grid points. The results (see Table 1) show a few locations where the difference in instrument orientation was substantial. These occurred at stations 3+00, 65N; 3+00, 10S; 3+50, 110N; and 4+00, 100N, and two locations where the needle deflected, stations 3+25, 100N and 4+25, 100N. The data also shows an increase in reading values around station 3+00, 00; however, this may be due to the large amounts of sludge or slag deposited there.

The Magnetometer is another instrument used to determine the presence of buried drums. The instrument measures magnetic field strength in units of gammas. Local variations, or anomalies, in the earth's magnetic field are the result of disturbances caused mostly by variations in concentrations of ferromagnetic material in the vicinity of the magnetometer's sensor. A buried ferrous object, such as a steel drum or tank, locally distorts the earth's magnetic field and results in a magnetic anomaly. The results are interpreted by looking for significant increases or decreases (several hundred units) from the background, or for inconsistent readings at one location. The magnetometer was used at each of the grid points and a few locations between grid points. At all locations, three readings were obtained, the first was recorded and the other two were to verify consistency. All of the stations had consistent readings. The results (see Table 2) show that there were several locations of high readings: around 1+50, 25S; 2+50, 50N; and 4+00, 100N; however, these elevated readings may be due to the large amount of sludge or slag deposited there.

4.3 Surface Sample Analyses

The XMET is an instrument used to detect the presence of elements. It is meant only as a screening tool, to help determine sampling locations, and to provide an approximation of the concentrations. The XMET was used to detect the presence of lead and zinc in the surface soil. Analysis was performed at each grid point, and determined by analyzing the soil in-situ three times (no sample was actually collected). The concentrations presented in Table 3 are the average of the three readings. The results showed the presence of lead and zinc at the surface at concentrations greater than 1000 parts per million (ppm). The XMET raw data is included in Appendix D.

TABLE 1 CONDUCTIVITY METER READINGS

MARCH 1992 EXTENT OF CONTAMINATION SURVEY HARCO PROPERTY SITE WILTON, CONNECTICUT

Station Location		Results	
Baseline	Range	N/S	E/W
0+50	50N	6.5	6.5
0+50	0	5.5	5.5
0+50	50S	7.0	7.0
ES1	85S	6.0	6.0
1+00	100N	5.5	5.0
1+00	50N	6.0	6.0
1+00	0	6.5	6.0
1+00	50S	5.0	5.0
1+50	100N	7.0	2.0
* 1+50	75N	10.0	5.0
1+50	50N	5.0	5.0
* 1+50	15N	13.0	14.0
1+50	0	17.0	18.0
1+50	25S	7.0	6.0
2+00	150N	7.0	8.5
2+00	100N	4.0	8.0
2+00	40N	17.0	18.0
2+00	0	8.0	7.5
2+00	25S	20.0	18.0
2+50	50N	12.0	15.0
2+50	0	9.0	9.0
2+50	50S	10.0	9.0
3+00	90N	7.0	14.0
* 3+00	75N	20.0	14.0
* 3+00	65N	0.0	19.0
3+00	50N	24.0	24.0
* 3+00	25N	29.0	29.0
* 3+00	05N	26.0	27.0
3+00	0	18.0	21.0
* 3+00	10S	0.0	30.0
* 3+00	25S	24.0	21.0
3+00	50S	18.0	17.0
3+00	100S	6.0	6.0

Station Location		Results	
Baseline	Range	N/S	E/W
3+00	125S	5.5	5.5
* 3+25	100N	Deflec	Deflec
3+50	155N	7.0	3.5
* 3+50	125N	0.0	0.0
* 3+50	110N	0.0	28.0
3+50	100N	6.0	10.0
* 3+50	75N	0.0	0.0
* 3+50	65N	12.0	9.0
3+50	50N	12.0	9.0
* 3+50	45N	0.0	0.0
* 3+50	40N	0.0	0.0
* 3+50	35N	15.0	12.0
3+50	0	10.0	10.0
3+50	50S	24.0	25.0
3+50	100S	6.0	6.0
* 3+75	75S	25.0	25.0
4+00	150N	0.0	4.0
* 4+00	125N	0.0	0.0
4+00	100N	0.0	10.0
* 4+00	75N	19.0	16.0
* 4+00	55N	0.0	4.0
4+00	50N	6.0	6.0
* 4+00	25N	0.0	0.0
* 4+00	10N	0.0	0.0
4+00	0	19.0	19.0
* 4+00	20S	1.0	10.0
4+00	45S	6.0	6.0
* 4+25	100N	Deflec	Deflec
4+40	100N	9.0	6.0
4+40	50N	6.0	6.0
4+40	0	6.0	11.0
4+40	30S	6.0	5.0

* = Approximate locations

Instrument: Geonics LTD EM-31 Non-Contacting Terrain Conductivity Meter

NOTE: The Baseline is the east-west reference line of the sampling grid.
The Range is the distance in feet, either north or south, from the Baseline.

TABLE 2
MAGNETOMETER READINGS

**MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT**

Station Location		Results
Baseline	Range	
0+00	0	54,469
0+50	50N	54,485
0+50	0	54,467
0+50	50S	54,418
1+00	100N	54,521
1+00	50N	54,568
1+00	0	54,575
1+00	50S	54,620
1+50	100N	54,422
1+50	50N	54,572
1+50	0	54,459
1+50	25S	55,070
2+00	150N	54,319
2+00	100N	54,674
2+00	40N	54,636
2+00	0	54,651
2+00	25S	54,648
2+50	50N	54,957
2+50	0	54,654
2+50	50S	54,655
3+00	90N	54,843
3+00	50N	54,679

Station Location		Results
Baseline	Range	
3+00	0	54,795
3+00	50S	54,869
3+00	100S	54,583
3+00	125S	54,605
3+50	155N	54,405
3+50	100N	54,561
3+50	50N	54,438
3+50	0	54,435
3+50	50S	54,561
3+50	100S	54,532
4+00	150N	54,374
* 4+00	125N	54,804
4+00	100N	55,186
4+00	50N	54,854
* 4+00	25N	54,545
4+00	0	54,916
4+00	45S	54,630
4+40	100N	54,587
4+40	50N	54,343
4+40	0	54,567
4+40	30S	54,607

* = Approximate locations

Instrument: EG+G Proton Precession G-856 Magnetometer

NOTE: The Baseline is the east-west reference line of the sampling grid.
The Range is the distance in feet, either north or south, from the Baseline.

TABLE 3 **XRF SURFACE SOIL RESULTS**

MARCH 1992 EXTENT OF CONTAMINATION SURVEY **HARCO PROPERTY SITE** **WILTON, CONNECTICUT**

Sample Location		Results (ppm)	
Baseline	Range	Lead	Zinc
0+00	0	0	2380
0+50	50N	0	940
0+50	0	0	400
0+50	50S	140	90
ES1	85S	200	80
1+00	100N	0	640
1+00	50N	0	190
1+00	0	550	1810
1+00	50S	0	570
1+50	100N	0	520
1+50	50N	0	480
1+50	0	0	0
1+50	25S	0	1790
*1+75	105N	1760	>10,000
*1+75	75N	0	730
2+00	150N	1320	>10,000
2+00	100N	840	1510
*2+00	80N	1580	>10,000
*2+00	75N	0	1200
2+00	40N	0	2070
2+00	0	0	590
2+00	25S	0	570
*2+15	110N	0	0
2+50	50N	0	0
2+50	0	60	0

* - Approximate locations

Sample Location		Results (ppm)	
Baseline	Range	Lead	Zinc
*2+50	15S	660	5530
2+50	50S	0	570
3+00	90N	0	0
3+00	50N	3300	>10,000
3+00	0	940	1280
3+00	50S	290	1360
3+00	100S	0	0
3+00	125S	0	0
*3+25	150N	0	0
3+50	155N	0	0
3+50	100N	0	0
3+50	50N	0	0
3+50	0	0	0
3+50	50S	470	1910
*3+50	75S	1650	>10,000
3+50	100S	600	3990
4+00	150N	570	3140
4+00	100N	0	280
4+00	50N	0	480
4+00	0	0	0
4+00	45S	420	1740
4+40	100N	0	460
4+40	50N	0	1330
4+40	0	950	3070
4+40	30S	0	400

ppm = parts per million

Instrument: Outokumpu XMET 880 X-Ray Fluorescence (XRF) Analyzer

NOTE: The Baseline is the east-west reference line of the sampling grid. (Distance in feet.)
The Range is the north-south coordinate off of the Baseline. (Distance in feet.)

This instrument is used only as a screening tool, to help determine sampling locations, and only intended to give an approximation of the contaminant concentration.

The analyses were performed in-situ, no sample was collected.

4.4 Subsurface Sample Analyses

Subsurface conditions were determined by boring a hole in each of the quadrants (see Figure 5) with a hand auger until refusal. The soil was continuously extracted and examined to determine the subsurface conditions (e.g., soil texture and groundwater depth), which are listed in Table 4. All the soil from the boring hole was composited, then analyzed using both the XMET and the SEFA-P instrumentation. The XMET was used only to provide results while on site, to help determine further site activities; whereas, the SEFA-P was used to provide more reliable results used to determine the extent of the contamination. The results (see Table 5) show that the contamination is present below the surface, at depths ranging from 2 - 3 feet. The raw SEFA-P data is included in Appendix E.

4.5 Soil Confirmation Sample Analyses

Soil Confirmation samples were collected from six subsurface stations (see Figure 5 for locations), and submitted to NERL for analysis using inductively coupled plasma (ICP) instrumentation. The samples were from the composites prepared in section 4.4, and were analyzed by NERL to confirm the XRF lead and zinc results obtained with the SEFA-P. In addition to the lead and zinc, NERL reported the results for 12 other analytes (see Table 6). As shown below, the lead and zinc results showed good correlation to the results obtained using the SEFA-P:

<u>Station</u>	<u>Analyte</u>	<u>Results</u>		<u>% Difference</u>
		<u>SEFA-P</u>	<u>ICP</u>	
028	Lead	< 300	670	200
	Zinc	5,770	4,970	2
029	Lead	2,570	3,340	26
	Zinc	22,500	19,700	13
030	Lead	3,870	4,350	12
	Zinc	22,900	21,500	6
031	Lead	2,090	8,900	124
	Zinc	14,500	12,600	14
032	Lead	12,400	11,400	8
	Zinc	75,700	84,400	11
033	Lead	960	3,180	107
	Zinc	12,600	19,300	43

The NERL results verify the presence of relatively high concentrations of lead and zinc. The sample chain-of-custody forms are included in Appendix F. The sample cards are included in Appendix G. The NERL analytical report is included as Appendix I.

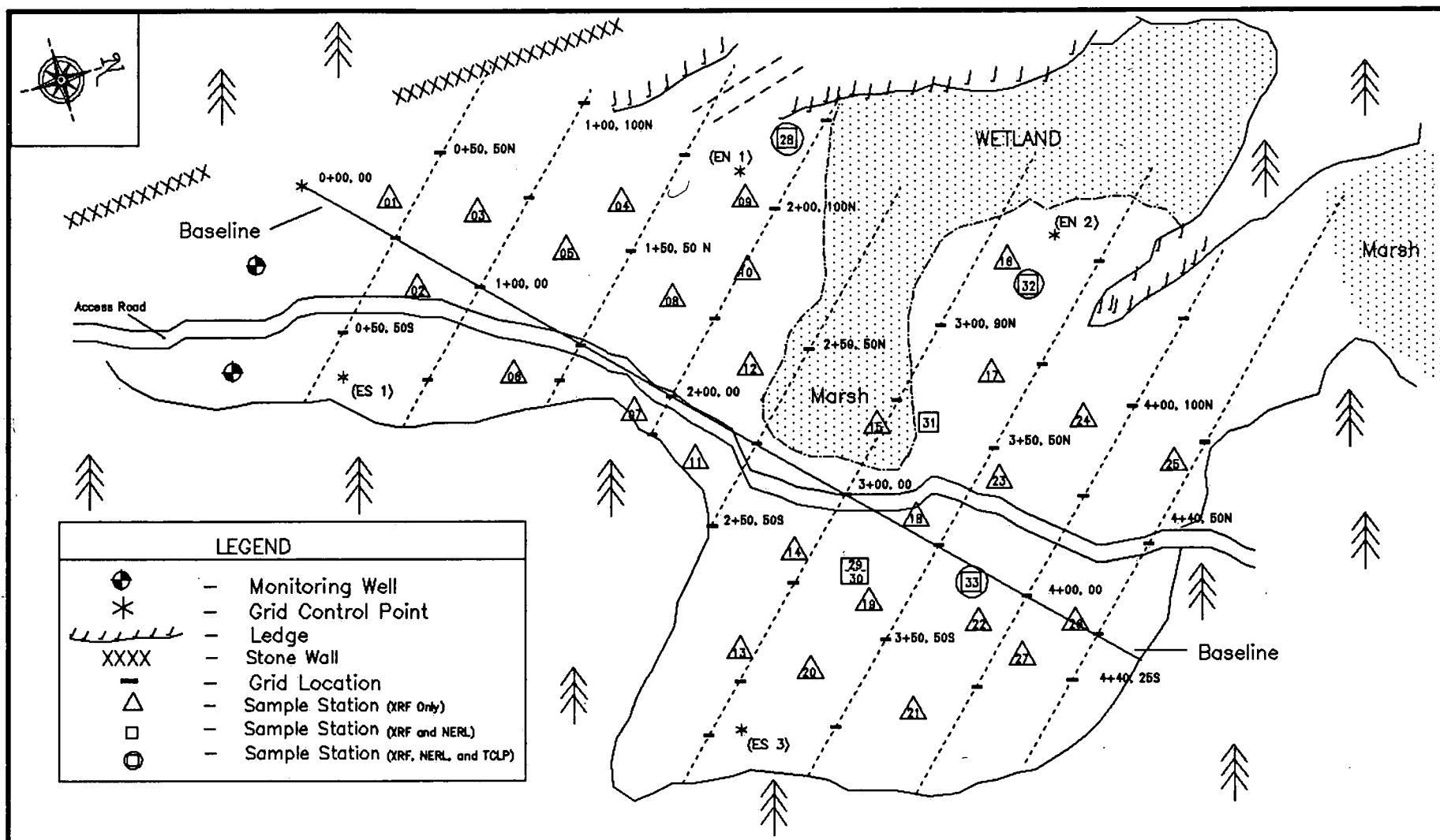


FIGURE 5
SOIL SAMPLE LOCATIONS
MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

NO SCALE

WESTON
 MANAGERS DESIGNERS/CONSULTANTS
 REGION I TECHNICAL ASSISTANCE TEAM

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TABLE 4 **SUBSURFACE SOIL CONDITIONS**

MARCH 1992 EXTENT OF CONTAMINATION SURVEY **HARCO PROPERTY SITE** **WILTON, CONNECTICUT**

Page 1 of 2

Station	Quadrant (1)	Refusal Depth	Groundwater Level	Sample Description
001	0+50,00	6"	---	RED SLUDGE
002	1+00,50S	6"	---	Top reddish-brown SLUDGE; sand, trace of gravel and micaceous flecks. Bottom same but darker
003	1+00,00	24"	20"	Light tan fine sand and clay; trace of Gravel
004	1+50,50N	8"	---	Brown silt and sand; some clay. Gravel on surface
005	1+50,00	18"	---	Tan-brown silt and sand; micaceous flecks, and trace of clay.
006	1+50,25S	18"	3"	Wet, light brown silt; some sand and clay.
007	2+00,25S	24"	24"	0-18" brown silt and clay, some sand. 18-24" peat, dark organic layer
008	2+00,00	16"	6"	Brown silt and sand; some light clay.
009	2+00,100N	24"	12"	0-4" RED SLUDGE; some gravel and sand. 4-24" brown organic.
010	2+00,40N	2"	Surface	RED SLUDGE; trace of gravel and sand.
011	2+50,50S	16"	---	Dark grey-brown sand and silt; little gravel.
012	2+50,00	12"	2"	Brown silt and fine sand; trace of clay in swamp.
013	3+00,100S	18"	10"	Black-brown silt and fine sand; trace of clay and gravel; micaceous flecks, wet.
014	3+00,50S	18"	---	RED SLUDGE 17-18" Black Inclusions throughout sand
015	3+00,00	36"	16"	RED SLUDGE; some wet sand.
016	3+50,100N	18"	---	Brown sand, silt, and clay; wet. (located in marsh)

1 - Quadrants are referenced by the South-East Corner of the Grid Cell.

TABLE 4
SUBSURFACE SOIL CONDITIONS

MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

Page 2 of 2

Station	Quadrant (1)	Refusal Depth	Groundwater Level	Sample Description
017	3+50,50N	12"	---	Brown sand and silt, micaceous.
018	3+50,00	18"	---	0-12" topsoil, black organic. 12-18" RED SLUDGE
019	3+50,50S	24"	---	RED SLUDGE, trace of gravel.
020	3+50,100S	20"	---	Dark brown silt and sand, wet.
021	4+00,100S	12"	---	0-4" RED SLUDGE 4-12" tan sand and silt.
022	4+00,45S	24"	---	0-4" Brown topsoil. 4-20" RED SLUDGE. 20-24" Thick sludge, more grey in color.
023	4+00,00	12"	10"	Dark brown-black sandy soil.
024	4+00,50N	18"	---	Dark brown-black organic rich soil. (Pieces of SLAG noticed in area)
025	4+40,50N	2"	---	Dark brown-black silt and fine sand.
026	4+40,00	14"	---	Red-brown SLUDGE with micaceous flecks.
027	4+40,30S	24"	---	0-12" topsoil. 12-18" reddish-brown SLUDGE 18-24" black soil.
028	2+00,100N	24"	---	0-3" RED SLUDGE. 3-24" brown-grey sand and clay, wet.
029	3+50,50S	24"	---	RED SLUDGE with black-gray SLAG material.
030	3+50,50S	24"	---	RED SLUDGE with black-gray SLAG material.
031	3+50,00	16"	6"	Red-brown SLUDGE, some reddish-brown gravel.
032	3+50,100N	12"	2"	Dark brown-black-dark grey silt and sand. SLAG material mixed in.
033	4+00,45S	24"	---	0-4" Brown topsoil. 4-20" RED SLUDGE. 20-24" Thick SLUDGE, more grey in color.

1 - Quadrants are referenced by the South-East Corner of the Grid Cell.

TABLE 5

XRF SUBSURFACE SOIL RESULTS

MARCH 1992 EXTENT OF CONTAMINATION SURVEY HARCO PROPERTY SITE WILTON, CONNECTICUT

Sample Location			Lead Results (ppm)		Zinc Results (ppm)	
Station	Quadrant (1)	Depth	XMET	SEFA-P	XMET	SEFA-P
001	0+50,00	0 - 06"	560	3470	5410	9520
002	1+00,50S	0 - 06"	< 300	1800	1070	2030
003	1+00,00	0 - 24"	< 300	< 300	580	360
004	1+50,50N	0 - 08"	< 300	< 300	380	570
005	1+50,00	0 - 18"	< 300	960	400	2630
006	1+50,25S	0 - 18"	< 300	< 300	720	230
007	2+00,25S	0 - 24"	< 300	< 300	670	< 100
008	2+00,00	0 - 16"	< 300	1110	< 100	2770
009	2+00,100N	0 - 24"	570	1880	2830	8570
010	2+00,40N	0 - 02"	1300	3730	8660	18,200
011	2+50,50S	0 - 16"	< 300	910	350	1070
012	2+50,00	0 - 12"	< 300	440	< 100	1460
013	3+00,100S	0 - 18"	< 300	1280	450	990
014	3+00,50S	0 - 18"	5060	7500	>10,000	23,700
015	3+00,00	0 - 36"	1800	4070	>10,000	13,700
016	3+50,100N	0 - 18"	< 300	3640	< 100	4160
017	3+50,50N	0 - 12"	< 300	< 300	540	2730
018	3+50,00	0 - 18"	1440	530	8340	10,800
019	3+50,50S	0 - 24"	2540	5310	>10,000	23,700
020	3+50,100S	0 - 20"	< 300	< 300	< 100	1600
021	4+00,100S	0 - 12"	1820	2730	>10,000	23,200
022	4+00,45S	0 - 24"	1570	2860	>10,000	14,300
023	4+00,00	0 - 12"	1260	4130	800	39,900
024	4+00,50N	0 - 18"	5680	11,000	>10,000	27,900
025	4+40,50N	0 - 02"	320	1710	2020	6660
026	4+40,00	0 - 14"	< 300	< 300	2510	4960
027	4+40,30S	0 - 24"	800	1160	5160	7440
028 (*)	2+00,100N	0 - 24"	< 300	< 300	< 100	5770
029 (*)	3+50,50S	0 - 24"	3240	2570	>10,000	22,500
030 (*)	3+50,50S	0 - 24"	3510	3870	>10,000	22,900
031 (*)	3+50,00	0 - 16"	1820	2090	>10,000	14,500
032 (*)	3+50,100N	0 - 12"	< 300	12,400	< 100	75,700
033 (*)	4+00,45S	0 - 24"	2190	960	>10,000	12,600

1 - Quadrants are referenced by the South-East Corner of the Grid Cell.

ppm = parts per million

NOTE: Samples are a composite of all the soil collected from the boring hole.

See Figure 5 for Sample Station locations.

* - These samples were also analyzed using ICP. See Table 6 for results.

Instruments: Outokumpu X-MET 880 X-Ray Fluorescence (XRF) Analyzer (XMET)

HNU Systems, Inc. SEFA-P X-Ray Fluorescence Analyzer (SEFA-P)

TABLE 6
NERL ICP ANALYTICAL RESULTS FOR CONFIRMATION SOIL SAMPLES
MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

EPA Sample Number:	01603	01604	01605	01606	01607	01608
Station Number:	028 (*)	029	030	031	032 (*)	033 (*)
Station Location:	Quadrant 2+00, 100N	Quadrant 3+50, 50S	Quadrant 3+50, 50S	Quadrant 3+50, 00	Quadrant 3+50, 100N	Quadrant 4+00, 45S
Aluminum:	24,800	8,000	10,800	6,420	5,500	10,600
Arsenic:	130	80	96	61	34	75
Barium:	170	150	200	86	95	120
Cadmium:	4	9	7	4	76	12
Calcium:	14,400	68,900	51,700	86,000	15,700	73,900
Chromium:	51	88	100	51	19	57
Copper:	450	2,400	2,870	990	170	1,500
Iron:	49,500	136,000	130,000	140,000	14,500	131,000
Lead:	670	3,340	4,350	8,900	11,400	3,180
Magnesium:	6,450	4,980	5,930	4,480	4,360	5,530
Manganese:	360	580	550	640	280	640
Nickel:	48	130	160	110	19	140
Silver:	--	--	--	--	--	--
Zinc:	4,970	19,700	21,500	12,600	84,400	19,300

Instrumentation: Inductively Coupled Plasma (ICP)

Results in ppm = parts per million

NOTE: Samples are a composite of all the soil collected from the boring hole.

* - These samples were also analyzed for TCLP. See Table 8 for results.

4.6 Aqueous Sample Analyses

Aqueous samples were collected from water either on-site or adjacent to the site to determine whether the contamination was leaching from the soil. Five drinking water samples were collected from residences adjacent to the site. Two breakout water samples were collected on the site but were located several hundred feet away from the area of concern. Five surface water samples were collected on-site in the area of concern, or adjacent to the site. Finally, two rinsate blanks were collected to determine whether any cross-contamination was occurring during the subsurface investigation. All of these aqueous samples were submitted to NERL for analysis. The sample locations are depicted in Figure 6 and the NERL results are presented in Table 7. The chain-of-custody forms are included in Appendix F. The sample cards are included in Appendix G. The sample release cards are included in Appendix H. The NERL analytical report is included in Appendix I.

4.7 Waste Disposal Samples

Three soil samples were collected for Toxicity Characteristic Leaching Procedure (TCLP) analysis. These samples were collected from the subsurface station locations (see Figure 5 for locations) and submitted to Laboratory Resources, Inc., Brooklyn, Connecticut, for analysis of arsenic, barium, cadmium, chromium, lead, mercury, nickel, selenium, silver, and zinc (see Table 8 - TCLP Results). The chain-of-custody form is included in Appendix F. The sample cards are included in Appendix G. The Laboratory Resources, Inc. report is included in Appendix J.

4.8 Site Observations

The following observations were made during the site visit:

- The site showed signs of activity from both people and wildlife, (e.g., motorbike tracks, a tree fort, deer tracks, and ducks in the ponds on site).
- The standing water present on the site was high, with water constantly flowing off site.
- There were two types of deposited material: a red sludge, and a black slag. The red sludge was found throughout the site. The slag was found primarily above the line formed by points 3+00, 90N and 4+00, 50N; however, small quantities of slag material was observed randomly mixed with the sludge. This has led to inconsistencies with the analytical data.
- Photographs of the site were taken and are presented in Appendix K.

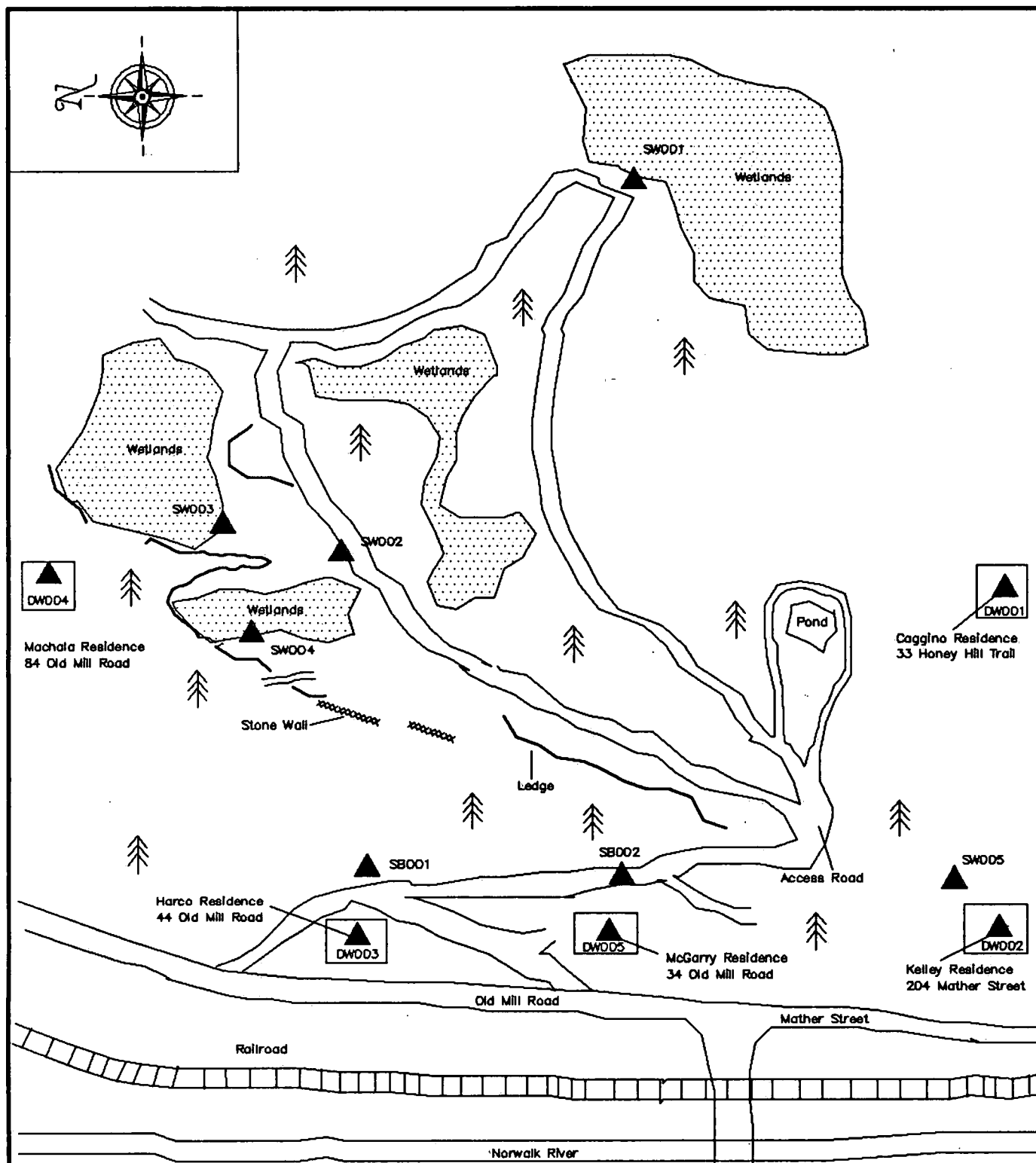


FIGURE 6
AQUEOUS SAMPLE LOCATIONS
EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

NO SCALE

WESTON
 MANAGERS DESIGNERS/CONSULTANTS
 REGION I TECHNICAL ASSISTANCE TEAM

DRAWN
 Paul F. Killian

DATE
 05/92

PCS #
 1810

APPROVED
[Signature]

DATE
 5/92

TDD #
 01-9201-010

TABLE 7
NERL ICP ANALYTICAL RESULTS FOR AQUEOUS SAMPLES
MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

Page 1 of 2

EPA Sample Number:	01589	01590	01591	01592	01593	01594	01595	Drinking Water MCL
Station Number:	DW001	DW002	DW003	SB001	SB002	SW001	SW004	
Station Location:	Caggino Residence 33 Honey Hill Trail	Kelley Residence 204 Mathers Street	Harco Residence 44 Old Mill Road	Harco House Base at Rockface	Access Road 50 ft from Chain	Stream Main Outlet	Pond STA 2+00, 150N	
Aluminum:	--	--	--	395	472	94	140	Not Listed
Arsenic:	--	--	--	--	--	--	--	50
Barium:	9	23	94	32	18	24	63	1,000
Beryllium:	--	--	--	--	--	--	--	Not Listed
Cadmium:	--	--	--	--	--	--	--	10
Calcium:	8,790	5,490	32,310	7,800	3,590	15,530	37,400	Not Listed
Chromium:	--	--	--	--	--	--	--	50
Cobalt:	--	--	--	--	--	--	4	Not Listed
Copper:	--	--	--	--	--	--	--	Not Listed
Iron:	170	62	85	656	725	377	6,490	Not Listed
Lead:	--	--	--	--	--	--	--	50
Magnesium:	3,080	1,800	5,160	1,560	1,320	2,650	3,980	Not Listed
Manganese:	42	3	5	20	17	29	735	Not Listed
Nickel:	--	--	--	--	--	--	--	Not Listed
Selenium:	--	--	--	--	--	--	--	10
Silver:	--	--	--	--	--	--	--	50
Vanadium:	--	--	--	--	--	--	--	Not Listed
Zinc:	91	35	42	--	43	--	447	Not Listed

Instrumentation: Inductively Coupled Plasma (ICP)

Results in ppb = parts per billion

TABLE 7
NERL ICP ANALYTICAL RESULTS FOR AQUEOUS SAMPLES
MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

Page 2 of 2

EPA Sample Number:	01596	01597	01598	01599	01600	01601	01602	Drinking Water MCL
Station Number:	SW003	SW002	DW004	SW005	DW005	Rinsate	RB002	
Station Location:	Pond Near Machala's	Surface 6TA 3+50, 50N	Machala Residence 84 Old Mill Road	Surface Kelley Residence	McGarry Residence 34 Old Mill Road	Rinsate Blank Hand Auger	Rinsate Blank Bucket Auger	
Aluminum:	108	619	13	31	15	32	37	Not Listed
Arsenic:	--	--	--	--	--	--	--	50
Barium:	55	82	44	32	--	--	--	1,000
Beryllium:	--	--	--	--	--	--	--	Not Listed
Cadmium:	--	--	--	--	--	--	--	10
Calcium:	51,520	55,350	20,020	5,850	29,240	148	172	Not Listed
Chromium:	--	--	--	3	--	--	20	50
Cobalt:	--	--	--	--	--	4	--	Not Listed
Copper:	--	--	--	--	--	--	--	Not Listed
Iron:	2,880	10,930	1,100	--	--	4,630	6,410	Not Listed
Lead:	--	90	--	--	--	--	--	50
Magnesium:	6,880	4,980	3,330	1,940	1,920	17	16	Not Listed
Manganese:	619	450	211	--	20	62	64	Not Listed
Nickel:	--	--	--	--	4	638	26	Not Listed
Selenium:	--	--	--	--	--	--	--	10
Silver:	--	--	--	--	--	--	--	50
Vanadium:	--	--	--	--	--	--	--	Not Listed
Zinc:	180	2,780	--	--	--	32	43	Not Listed

Instrumentation: Inductively Coupled Plasma (ICP)

Results in ppb = parts per billion

TABLE 8
TCLP RESULTS FOR SOIL/SLUDGE SAMPLES

MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

EPA Sample Number:	01603	01607	01608	
Station Location:	028	032	033	
Sample Description:	Soil/Sludge	Soil/Sludge	Sludge	
Sample Depth:	0 - 24 inches	0 - 12 inches	0 - 24 inches	
Sampling Date:	04/01/92	04/01/92	04/01/92	
Sampling Time:	1408	1510	1525	
Lab Sample Number:	E204095-01	E204095-02	E204095-03	Regulatory Level
Arsenic:	NA	1.0	0.4	5.0
Barium:	NA	0.92	0.24	100.0
Cadmium:	NA	0.46	0.09	1.0
Chromium:	--	--	--	5.0
Lead:	0.71	27.0 *	0.43	5.0
Mercury:	NA	--	--	0.2
Nickel:	0.19	--	0.34	Not Listed
Selenium:	NA	0.5	0.3	1.0
Silver:	NA	--	0.24	5.0
Zinc:	49	609	72	Not Listed

Results in mg/l (ppm)

KEY
NA - The analyte was not analyzed.
"--" - The analyte was not detected.
* - Result exceeds Regulatory Limits.

NOTE: Samples are a composite of all the soil collected from the boring hole.
The samples were also for total metals. See Table 6 for results.

Laboratory: Laboratory Resources, Inc., Brooklyn, CT
Method: 1311, 6010, 7470, SW-846, 3rd Edition

4.9 Previous EPA Site Visits

The EPA EPRB visited the site twice before this survey, each time collecting samples for analysis at NERL. In September 1990, EPA performed a preliminary assessment/site investigation (PA/SI). During the PA/SI, EPA collected five soil samples, two surface water samples, and one drum sample. The samples were submitted to NERL for volatile organic compound (VOC) analysis, base/neutral and acid-extractable (BNA) analysis, metals analysis, and cyanide analysis (see Figure 7 for sample locations). The only significant results were from the metals analyses (see Table 9), and in particular, lead. The NERL analytical report and the chain-of-custody form is included in Appendix L.

The EPA EPRB also visited the site in January 1992. During this visit the XMET was used on the surface soil to determine lead concentrations. Seven soil samples and one nugget were collected and submitted to NERL for ICP analysis (see Figure 7 for sample locations). The NERL results are presented in Table 10. These results also verify the presence of lead at concentrations greater than 1000 ppm. The NERL analytical report and the chain-of-custody form is included in Appendix M.

5.0 PRELIMINARY FINDINGS

The extent of contamination study was performed at the Harco Property Site in Wilton, Connecticut to define the amount and area of soil contamination present, and to assist in the planning of the appropriate cleanup actions. The study combined field screening methods for lead and zinc using the XMET with confirmation analysis for lead and zinc at NERL using the ICP. The target analytes of lead and zinc were detected in both the field screening and the laboratory analyses; and these analytes were used to summarize the results of the study presented below.

5.1 Soil Contamination Summary

Lead and zinc were detected both on the surface and in the subsurface material (average refusal depth was 1.5 feet) at concentrations greater than 1000 ppm. Two types of material were detected: red sludge and black slag. The red sludge was found to contain an average of 3,000 ppm lead and 20,000 ppm zinc. This material, however, had TCLP results below the EPA regulatory limits for landfilling. The black slag was found to contain an average of 11,000 ppm lead and 80,000 ppm zinc. This material, however, did have TCLP results above the EPA regulatory limits for lead. The results of all lead and zinc samples are summarized in Table 11. The one lead sample analysis result of 84,500 ppm (EPA # 80828), collected during the September 1990 PA/SI, has not been replicated, and therefore should not be considered representative of the site.

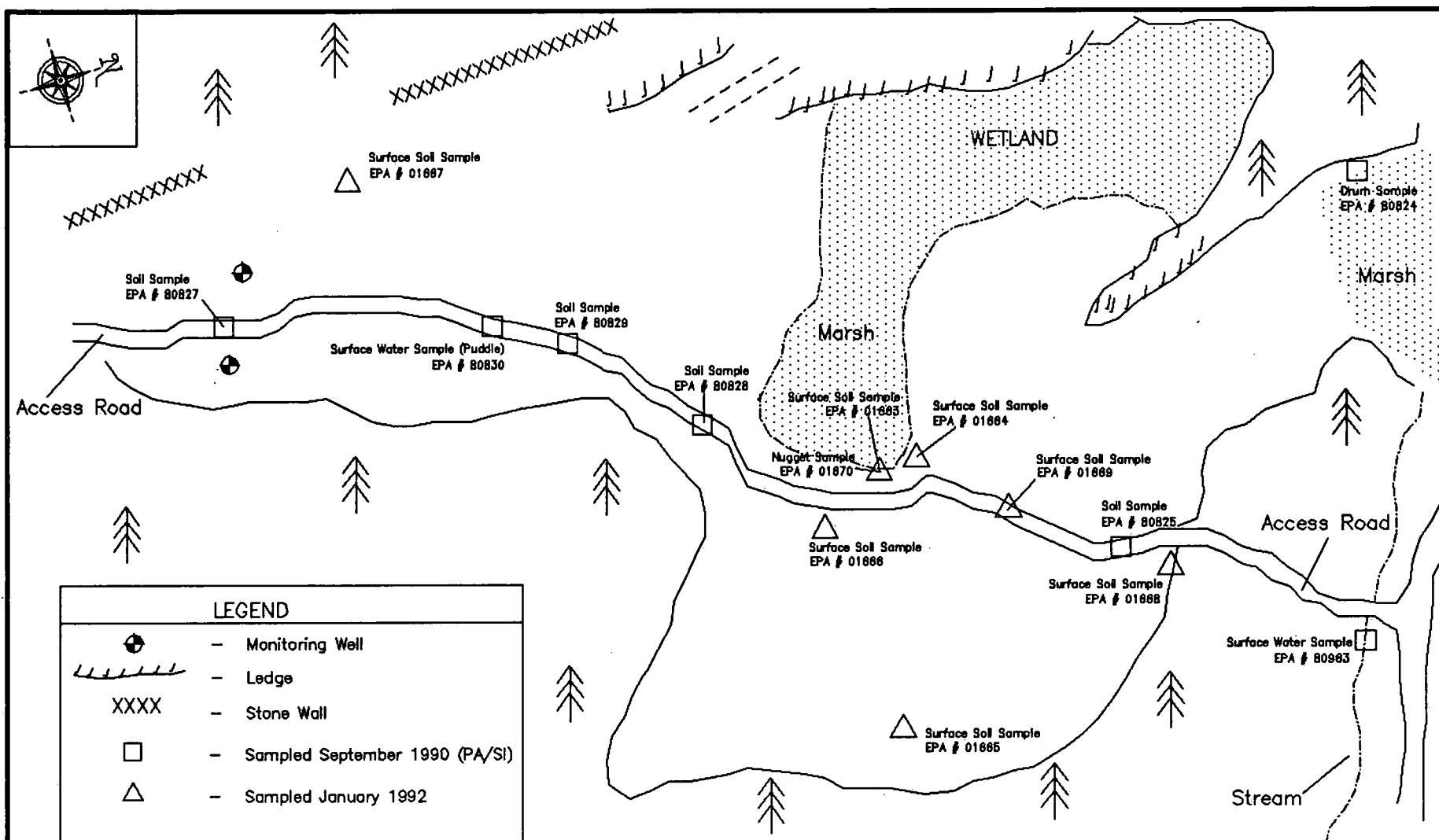


FIGURE 7
PREVIOUS SITE VISITS SAMPLING LOCATIONS
MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

NO SCALE

WESTON
 MANAGERS DESIGNERS/CONSULTANTS
 REGION I TECHNICAL ASSISTANCE TEAM

DRAWN
 Paul F. Killian

DATE
 05/92

PCS #
 1810

APPROVED

PK

DATE
 5/92

TDD #
 01-9201-01D

TABLE 9
NERL ICP ANALYTICAL RESULTS FOR DRUM, SOIL
AND SURFACE WATER SAMPLES COLLECTED IN SEPTEMBER, 1990

MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

EPA Sample Number:	80824	80825	80826	80827	80828	80829	80830	80963
Station Location:	Drum Sample	Soil Near Truck	Soil Near Woods	Soil On Road	Soil On Road	Soil On Road	Surface Water Puddle	Surface Water Stream
Arsenic:	NA	NA	NA	NA	NA	NA	--	--
Barium:	17,500	99	150	33	110	110	0.274	0.142
Cadmium:	6	59	4	--	20	--	--	--
Chromium:	270	22	44	8	22	30	0.036	--
Copper:	16	110	940	7	290	36	0.019	--
Lead:	1,290	8,520	1,280	370	84,500	4,430	0.181	0.981
Nickel:	33	12	83	6	24	19	0.024	--
Selenium:	NA	NA	NA	NA	NA	NA	--	--
Silver:	--	--	--	--	--	--	--	--
Tin:	--	--	14	--	--	--	--	--
Zinc:	120	47,600	9,870	910	46,200	990	0.751	9.070
Cyanide:	NA	--	--	--	--	--	--	--

NA -- Element was not analyzed.

Results in ppm = parts per million

Instrumentation: Inductively Coupled Plasma (ICP)

NOTE: The sample locations are depicted in Figure 7

TABLE 10
NERL ICP ANALYTICAL RESULTS FOR SURFACE SOIL/NUGGET SAMPLES
COLLECTED IN JANUARY, 1990

MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

EPA Sample Number:	01663	01664	01665	01666	01667	01668	01669	01670
Station Location:	Surface Soil	Surface Soil	Surface Soil	Surface Soil	Surface Soil	Surface Soil	Surface Soil	Nugget
Calcium:	108,000	81,400	41,900	7,400	6,650	683	1,860	6,280
Iron:	184,000	133,000	262,000	47,500	101,000	30,800	22,500	6,850
Lead:	2,940	3,300	6,680	2,610	1,830	83	90	7,920
Zinc:	21,500	20,200	30,200	13,000	13,400	64	120	585,000

Instrumentation: Inductively Coupled Plasma (ICP)

Results in ppm = parts per million

NOTE: The sample locations are depicted in Figure 7

TABLE 11
SUMMARY OF LEAD AND ZINC RESULTS
FOR SOIL AND WATER SAMPLES

MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

Page 1 of 2

SOIL SAMPLE			Method	RESULTS		Date Sampled
Quadrant (1)	Station	Type		LEAD	ZINC	
0+50,00	001	Subsurface Soil	SEFA-P	3470	9520	March 1992
0+50,00	EPA 01667	Surface Soil	ICP	1830	13,400	January 1992
0+50,50S	EPA 80827	Soil	ICP	370	910	September 1990
1+00,00	003	Subsurface Soil	SEFA-P	< 300	360	March 1992
1+00,50S	002	Subsurface Soil	SEFA-P	1800	2030	March 1992
1+50,50N	004	Subsurface Soil	SEFA-P	< 300	570	March 1992
1+50,00	005	Subsurface Soil	SEFA-P	960	2630	March 1992
1+50,25S	006	Subsurface Soil	SEFA-P	< 300	230	March 1992
1+50,25S	EPA 80829	Soil	ICP	4430	990	September 1990
2+00,100N	009	Subsurface Soil	SEFA-P	1880	8570	March 1992
2+00,100N	028	Subsurface Soil	SEFA-P	< 300	5770	March 1992
2+00,100N	028	Subsurface Soil	ICP	690	4970	March 1992
2+00,100N	028	Subsurface Soil	TCLP	0.71	49	March 1992
2+00,40N	010	Subsurface Soil	SEFA-P	3730	18,200	March 1992
2+00,00	008	Subsurface Soil	SEFA-P	1110	2770	March 1992
2+00,25S	007	Subsurface Soil	SEFA-P	< 300	< 100	March 1992
2+50,00	012	Subsurface Soil	SEFA-P	440	1460	March 1992
2+50,50S	011	Subsurface Soil	SEFA-P	910	1070	March 1992
2+50,50S	EPA 80828	Soil	ICP	84,500	46,200	September 1990
3+00,00	015	Subsurface Soil	SEFA-P	4070	13,700	March 1992
3+00,50S	014	Subsurface Soil	SEFA-P	7500	23,700	March 1992
3+00,100S	013	Subsurface Soil	SEFA-P	1280	990	March 1992
3+50,100N	016	Subsurface Soil	SEFA-P	3640	4160	March 1992
3+50,100N	032	Subsurface Soil	SEFA-P	12,400	75,700	March 1992
3+50,100N	032	Subsurface Soil	ICP	11,400	84,400	March 1992
3+50,100N	032	Subsurface Soil	TCLP	27.0	609	March 1992
3+50,50N	017	Subsurface Soil	SEFA-P	< 300	2730	March 1992
3+50,00	018	Subsurface Soil	SEFA-P	530	10,800	March 1992
3+50,00	031	Subsurface Soil	SEFA-P	2090	14,500	March 1992
3+50,00	031	Subsurface Soil	ICP	8900	12,600	March 1992
3+50,00	EPA 01663	Surface Soil	ICP	2940	21,500	January 1992
3+50,00	EPA 01670	Nugget	ICP	6850	585,000	Januray 1992
3+50,00	EPA 01664	Surface Soil	ICP	3300	20,200	Januray 1992
3+50,50S	019	Subsurface Soil	SEFA-P	5310	23,700	March 1992
3+50,50S	EPA 01666	Surface Soil	ICP	2610	13,000	January 1992
3+50,50S	029	Subsurface Soil	SEFA-P	2570	22,500	March 1992
3+50,50S	029	Subsurface Soil	ICP	3340	19,700	March 1992
3+50,50S	030	Subsurface Soil	SEFA-P	3870	22,900	March 1992
3+50,50S	030	Subsurface Soil	ICP	4350	21,500	March 1992

Results in ppm (parts per million)

TABLE 11
SUMMARY OF LEAD AND ZINC RESULTS
FOR SOIL AND WATER SAMPLES

MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

Page 2 of 2

SOIL SAMPLE (CONT.)			Method	RESULTS		Date Sampled
Quadrant (1)	Station	Type		LEAD	ZINC	
3+50, 100S	020	Subsurface Soil	SEFA-P	< 300	1600	March 1992
4+00, 50N	024	Subsurface Soil	SEFA-P	5680	27,900	March 1992
4+00,00	023	Subsurface Soil	SEFA-P	4130	39,900	March 1992
4+00,00	EPA 01669	Surface Soil	ICP	90	120	January 1992
4+00,45S	022	Subsurface Soil	SEFA-P	2860	14,300	March 1992
4+00,45S	033	Subsurface Soil	SEFA-P	960	12,600	March 1992
4+00,45S	033	Subsurface Soil	ICP	3180	19,300	March 1992
4+00,45S	033	Subsurface Soil	TCLP	0.43	72	March 1992
4+00,45S	EPA 01665	Surface Soil	ICP	6680	30,200	January 1992
4+00,100S	021	Subsurface Soil	SEFA-P	2730	23,200	March 1992
4+40,50N	025	Subsurface Soil	SEFA-P	1710	6660	March 1992
4+40,00	026	Subsurface Soil	SEFA-P	< 300	4960	March 1992
4+40,00	EPA 80825	Soil	ICP	8520	47,600	September 1990
4+40,00	EPA 01668	Surface Soil	ICP	83	64	January 1992
4+40,30S	027	Subsurface Soil	SEFA-P	1160	7440	March 1992

Results in ppm (parts per million)

WATER SAMPLE		Method	RESULTS		Date Sampled
Location	Type		LEAD	ZINC	
Caggino Residence	Drinking Water	ICP	---	91	March 1992
Kelley Residence	Drinking Water	ICP	---	35	March 1992
Harco Residence	Drinking Water	ICP	---	42	March 1992
McGarry Residence	Drinking Water	ICP	---	---	March 1992
Machala Residence	Drinking Water	ICP	---	---	March 1992
By Harco Residence	Breakout Water	ICP	---	---	March 1992
Access Road	Breakout Water	ICP	---	43	March 1992
Near Kelley Residence	Surface Water	ICP	---	---	March 1992
1+50, 25S	Surface Water	ICP	181	751	September 1990
2+50, 150N	Surface Water	ICP	---	447	March 1992
Pond near Machala	Surface Water	ICP	---	180	March 1992
3+50, 50N	Surface Water	ICP	90	2,780	March 1992
Stream	Surface Water	ICP	981	9,070	September 1990
Stream at bend in road	Surface Water	ICP	---	---	March 1992

Results in ppb (parts per billion)

5.2 Aqueous Contamination Summary

The aqueous lead and zinc results (summarized in Table 11) show a variance in concentration between the September 1990 samples and the March 1992 samples. During the September 1990 visit, both water samples collected had lead at concentrations greater than the maximum contaminant level (MCL) for drinking water (50 ppb). However, during the March 1992 visit, only one sample had a lead concentration greater than 50 ppb, and that was a surface water sample collected from a puddle of standing water near grid point 3+50, 50N. This variance may be due to the seasonal water levels and flow rate of the water off site. In seasons when rainfall is low, the flow rate of the water off site is low, allowing more lead and zinc to extract out of the sludge/slag. In seasons when rainfall is high, the flow rate increases, causing the extracted lead and zinc to be diluted out.

The analytical results for other elements on the samples collected on March 1992 (Table 7, page 21) indicate that other analytes may be migrating off site. Aluminum, calcium, iron, and magnesium, which were found at high concentrations in the soil samples, were found present in all the drinking water samples collected during the March 1992 survey.

5.3 Estimated Volume of Contaminated Soil

There are two cleanup levels of lead contamination to consider: greater than 500 ppm and greater than 1000 ppm. Both are based on OSWER Directive 9355.4, and according to the Directive, which level is selected depends on how the land is to be developed. If the land is to be developed with residential dwellings, then the cleanup level of 500 ppm should be implemented. If the land is to be developed for commercial usage, then a 1000 ppm cleanup level should be implemented.

Based on the SEFA-P lead results (Table 5, page 16), there is an area of approximately 56,250 square feet of contaminated soil with lead concentrations greater than 500 ppm. At an average depth of 1.5 feet, this calculates out to approximately 3,125 cubic yards of contaminated soil. If the 1000 ppm cleanup level is used, then there is 50,000 square feet of area with an average depth of 1.5 feet, or 2,800 cubic yards of contaminated soil. A topographical map of the lead contamination is depicted in Figure 8.

5.4 Preliminary Treatment and Cleanup Options

There are several options for treatment of the material: vitrification, capping, stabilization/solidification, or excavation and removal. Vitrification is a thermal treatment used to transform chemical and physical hazardous waste into vitreous substances. The process is performed by inserting electrodes into the hazardous waste and mixing with significant levels of silicates. Graphite is placed on the surface, thus connecting the two electrodes. A high current of electricity passes through the electrodes and graphite. The heat causes a melt that gradually works downward through the hazardous waste. The heavy metals are trapped in the melt,

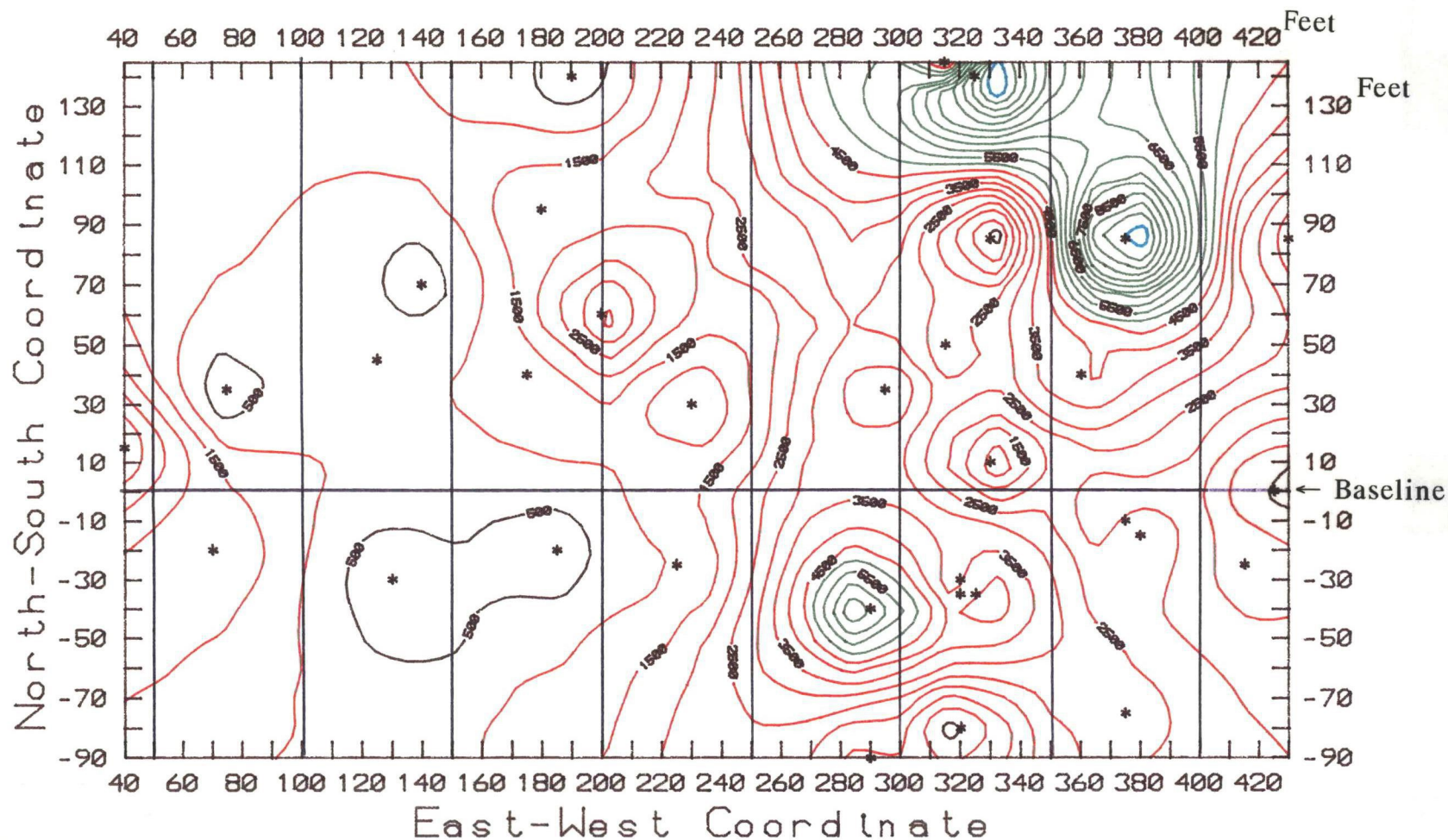


FIGURE 8
CONTOUR MAP OF LEAD CONCENTRATIONS IN SOIL
MARCH 1992 EXTENT OF CONTAMINATION SURVEY
HARCO PROPERTY SITE
WILTON, CONNECTICUT

Results in parts per million (ppm)
 Data presented in Table 5, page 16
 Sample locations depicted in Figure 5, page 13



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which as it cools becomes a very strong vitreous, noncrystalline, and stable mass. However, due to the high water table, this is not a practical option.

Capping is the process of covering or surrounding the hazardous material with an impermeable barrier such as a high density polyethylene (HDPE) liner, preventing material migration. This option is not very practical at Harco Property due to the high water table present at the site.

Stabilization/solidification is a treatment that immobilizes the hazardous waste by binding it in an immobile, insoluble matrix, or binding it in a matrix which minimizes the material surface exposed to solvent leaching. The process is to mix the hazardous waste with materials such as cement, silicates, and/or a organic polymer. This option is a possibility for this site.

There are two options involving excavation and removal. One would be to dispose of the material in a licensed landfill. The other option, probably the most beneficial, would be to locate an entity willing to take the hazardous waste in a Waste Exchange. In a Waste Exchange, the recycling company would recover the waste to be used for another purpose. This is a possibility for this site; however, it is not always possible to find a company willing to accept the waste. Excavation and removal into a licensed landfill is also an option for this site.

5.5 Summary

The results of the extent of contamination survey indicates that there are significant concentrations of lead and zinc present at the site. The slag material was found to contain 11,000 ppm lead and 80,000 ppm zinc, and leached lead at concentrations greater than the EPA regulatory limit for landfilling. The sludge material was found to contain an average of 3,000 ppm lead and 20,000 ppm zinc. Though the sludge samples analyzed for TCLP did not leach out lead in concentrations greater than the EPA regulatory limit, site observations noted that pieces of granular metal were randomly found mixed in with the sludge. These granules were found to contain significant concentrations of lead and/or zinc (i.e., the 84,500 ppm lead result from the September 1990 visit, and the 585,000 ppm zinc result from the nugget sample collected during the January 1992 visit). High levels of lead (greater than 1000 ppm) were observed at the surface. The Agency for Toxic Substances and Disease Registry (ATSDR) stated in their July 1991 Health Consultation that "the soil lead concentrations on site represent a threat to public health if persons, especially children, ingest even small amounts of soil".

It appears that the amount of lead and zinc that is leaching off site varies depending on the rainfall. Though the concentration of lead in the water samples collected during the March 1992 site visit were below the MCLs; the samples collected during the September 1990 site visit indicated lead concentrations in the stream to be 981 ppb, well above the MCL of 50 ppb.

A

APPENDIX A

SAMPLING QUALITY ASSURANCE/QUALITY CONTROL PLAN

**HARCO PROPERTY SITE
SAMPLING QUALITY ASSURANCE/
QUALITY CONTROL PLAN
WILTON, CONNECTICUT**

Prepared For:

**U.S. Environmental Protection Agency
Region I
60 Westview Street
Lexington, Massachusetts 02173**

CONTRACT NO. 68-W0-0036

TAT-01-N-00991

TDD NO. 01-9201-01B

Prepared By:

**Roy F. Weston, Inc.
Technical Assistance Team
Region I**

**January 1992
(Revised March 1992)**

TABLE OF CONTENTS

	<u>PAGE</u>
LIST OF FIGURES	iii
LIST OF TABLES	iv
1.0 Background	1
2.0 Data Use Objectives	1
3.0 Quality Assurance Objectives	4
4.0 Approach and Sampling Methodologies	5
4.1 Sampling Equipment	7
4.2 Sampling Design	7
4.3 Sample Documentation	9
4.4 Soil Sampling	11
4.4.1 Surface Soil Sampling	11
4.4.2 Depth Soil Sampling	12
4.5 Surface Water Sampling	12
4.6 Drinking Water Sampling	12
4.7 Sample Preparation and On-Site Analysis	13
4.7.1 Split Sampling of Soils for On-site Analysis	13
4.7.2 Split Sampling of Soils for Off-site Analysis	13
4.7.3 Split Sampling of Water Samples	13
4.8 Sample Handling and Shipment	13
4.9 Schedule of Activities	14
5.0 Project Organization and Responsibilities	14
6.0 Quality Assurance Requirements	15
7.0 Deliverables	15
8.0 Data Validation	15
9.0 References	17

LIST OF FIGURES

	<u>PAGE</u>
Figure 1 - Site Location Map	2
Figure 2 - Lead and Zinc Concentration Map	3
Figure 3 - Proposed Sample Location Map	8

LIST OF TABLES

	<u>PAGE</u>
Table 1 - Field Sampling Summary	6
Table 2 - QA/QC Analysis and Objective Summary	16

1.0 Background

The site is located on Old Mill Road in the city of Wilton, Fairfield County, Connecticut. The nearest residents are located within 0.1 miles north of the site. The Norwalk River is located 0.25 miles due west of the site (see Figure 1 - Site Location Map).

The site is a landfill facility on 41.1 acres which had been operating for an unknown number of years and was abandoned in 1982. Metal hydroxide sludge from the Gilbert and Bennett, Inc. facility located in Georgetown, CT, was handled by this facility. The volume of metal hydroxide sludge permitted by the Town of Wilton and the State of Connecticut, Water Resources Division, in 1970 for disposal was limited to 800 cubic yards, however the actual amounts are unknown. It was reported by the Town of Wilton Department of Environmental Health in January 1986 that the actual disposal exceeded the permit length of time. Additional areas and materials may have also been landfilled.

The primary contaminants of lead and zinc were identified during the EPA Removal Program Preliminary Assessment/Site Investigation (PA/SI) conducted on September 25, 1990 and a Site Visit on January 28, 1992, by the U.S. EPA and Roy F. Weston, Inc., Region I Technical Assistance Team (TAT). Lead was found at concentrations up to 84,500 parts per million (ppm) in soil. Zinc was found in a stream at concentrations up to 9 ppm. A site diagram including the sample stations and analytical results from the January 28, 1992 site visit is shown in Figure 2.

2.0 Data Use Objectives

The objective of the sampling survey is to obtain sufficient analytical data from a representative number of samples which can be used to determine the extent of contamination present at the site, and what further actions are necessary by the U.S. EPA, Region I, Emergency Planning and Response Branch (EPRB) at the site.

This sampling event is to determine the presence of contamination in surface water and drinking water, and to determine the extent of contamination in on-site soils for the purpose of site characterization. The drinking water data will be evaluated against the Maximum Contamination Level (MCL) of 0.05 ppm for lead, and the surface water data will be evaluated against the EPA Ambient Water Quality Criteria (WQC) for Protection of Human Health levels of 0.05 ppm for lead and 5 ppm for zinc. The soil data will be evaluated against the EPA established cleanup levels of 500 - 1000 ppm for lead in soil at Superfund Sites (OSWER Directive 9355.4-02A, January 1990) and U.S. EPA Environmental Response Team (ERT) has been contacted to assist the OSC in determining an appropriate action level for zinc at the site.

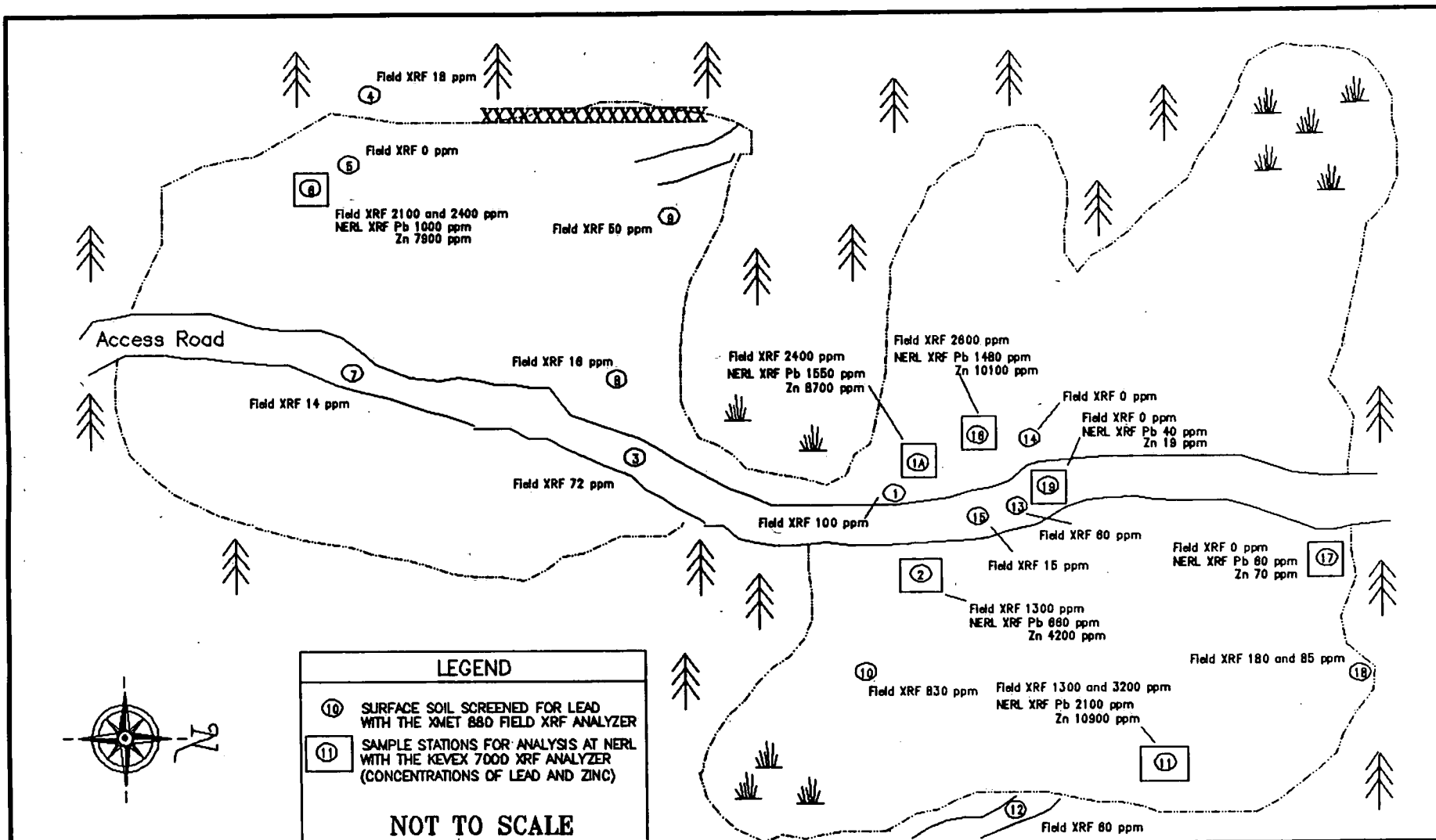


FIGURE 2
Lead and Zinc Concentration Map
HARCO PROPERTY
Wilton, Connecticut
EPA/TAT Sampling Survey – January 28, 1992

WESTON

REGION I TECHNICAL ASSISTANCE TEAM

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3.0 Quality Assurance Objectives

The QA objectives are described in OSWER Directive 9360.4-01 (April 1990-Interim Final), *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures* (OSWER 1990).

The quality assurance (QA) objectives for the on-site screening activities will be QA1. These activities include the use of the following instrumentation/test equipment:

- MIE, Inc. Model PDM-3 Personal Aerosol Monitor (Miniram)
- Outokumpu XMET 880 X-Ray Fluorescence (XRF) Analyzer (XMET)
- Geonics LTD EM 31-D Non-Contacting Terrain Conductivity Meter (EM-31)
- G-856 Magnetometer
- HNU Systems, Inc. Photoionization Detector, with 10.2 eV probe (PID)

The quality assurance (QA) objectives for the on-site analysis activities will be QA2. These activities include the use of the following instrumentation:

- HNU Systems, Inc. SEFA-P X-Ray Fluorescence (XRF) Analyzer (SEFA-P)

A private laboratory will be subcontracted by the Roy F. Weston, Inc., Technical Assistance Team (TAT) to perform the analyses of the Toxicity Characteristic Leachate Procedures (TCLP) on soil samples. The QA level for the samples analyzed at the private laboratory will be a modified QA2. It is anticipated that QA1 and QA2 will satisfy most data quality requirements for the Removal Program. QA3 is expected to be used only in those cases where an error determination is needed to identify false negative or false positive values for critical decision level concentrations.

The confirmation soil samples, the drinking water samples, the surface water samples, and the breakout water samples will be analyzed at the U.S. EPA New England Regional Laboratory (NERL). Analysis will include inductively coupled plasma (ICP) for all zinc analyses, ICP for lead analyses in soil, and graphite furnace atomic absorption (GFAA) analyses for lead in water. Samples have been identified using an internal classification of low, mid, and high-level concentrations, which refers to the anticipated level of potential contamination. This classification system was instituted by EPRB and NERL in May 1991. The classification system and relative sampling protocols used to develop this sampling plan are described in a Roy F. Weston, Inc. draft inter-office memorandum dated March 1992, which has been submitted for comment to EPRB and NERL.

As identified in Sections 1.0 and 2.0, the objective of this sampling event applies to the following parameters:

<u>QA Level</u>	<u>Parameters(Method)</u>	<u>Matrix</u>	<u>Intended Use Of Data</u>
QA1	Lead (XMET, Field)	Soil	Field Screening
QA1	Zinc (XMET, Field)	Soil	Field Screening
QA2 *	Lead (SEFA-P, Field)	Soil	Site Characterization
QA2 *	Zinc (SEFA-P, Field)	Soil	Site Characterization
QA2 *	Lead (ICP, Laboratory)	TCLP, Soil	Leachate/Disposal
QA2 *	Zinc (ICP, Laboratory)	TCLP, Soil	Leachate/Disposal
mid	Lead (ICP, NERL)	Soil	Confirmation of SEFA-P
mid	Zinc (ICP, NERL)	Soil	Confirmation of SEFA-P
low	Lead (GFAA, NERL)	Surface Water/ Breakout Water/ Drinking Water	Site Characterization/ Risk Assessment
low	Zinc (GFAA, NERL)	Surface Water/ Breakout Water/ Drinking Water	Site Characterization Risk Assessment

* = Modified

See Section 6.0 for quality assurance requirements.

4.0 Approach and Sampling Methodologies

Table 1, Field Sampling Summary Table, is provided to detail the specific number of samples per parameter per matrix, the number of QA samples, the required preservatives, sample holding times, appropriate sample containers and sample volume. This table will be used to ensure that the appropriate sample containers and sample preservatives are taken to the site.

The sampling survey will be conducted on or about March 31, 1992. The samples will be screened in the field prior to sample collection, if practical, to determine the location and quantity of samples to be collected. Whenever practical, samples will be collected from the least contaminated locations first. The samples will be containerized, preserved, and analyzed in accordance with Table 1. U.S. EPA chain of custody procedures will be utilized for all sampling activities. Samples will be disposed of by the laboratory performing the analyses. All contaminated sampling equipment will be disposed of by NERL.

TABLE 1
FIELD SAMPLING SUMMARY
HARCO PROPERTY SITE
WILTON, CONNECTICUT
MARCH 31, 1992 VISIT

SAMPLE LOCATION	ANALYSIS	SAMPLE VOLUME	CONTAINER	PRESERVATIVE	HOLDING TIMES	SUBTOTAL SAMPLES	QC EXTRAS		TOTAL FIELD SAMPLES
							RINSATE BLANKS (2)	FIELD DUPLICATES	
Surface Soil	XMET XRF	NA	NA	NA	180 days	~60	NA	3	~63
	SEFA-P XRF	20 gms	Ziplock	None	180 days	~25	NA	1	~26
	Off-Site (1)	10 gms	4-oz glass	ice	180 days	4	NA	1	5
Depth Soil	XMET XRF	NA	NA	NA	180 days	~30	NA	2	~32
	SEFA-P XRF	20 gms	Ziplock	None	180 days	~10	NA	1	~11
	Off-Site (1)	10 gms	4-oz glass	ice	180 days	3	1	1	5
Surface Water	Off-Site (2)	1 liter	1-l plastic	HNO ₃ , ice	180 days	4	NA	0	4
Breakout Water	Off-Site (2)	1 liter	1-l plastic	HNO ₃ , ice	180 days	4	NA	1	5
Drinking Water	Off-Site (2)	1 liter	1-l plastic	HNO ₃ , ice	180 days	4	NA	0	4
TCLP Soil (4)	Off-Site (1)	250 gms	16-oz glass	ice	180 days	3	NA	0	3

NA - Not Applicable. No sample is collected.

(1) - Lead and zinc are to be analyzed by ICP.

(2) - Lead is to be analyzed by GFAA and zinc by ICP.

(3) - Total volume required after the samples have been split.

(4) - TCLP analysis for lead and zinc.

~ - approximately.

4.1 Sampling Equipment

The following equipment will be utilized to obtain samples from the respective media/matrix:

<u>Parameter/Matrix</u>	<u>Sampling Equipment</u>	<u>Fabrication</u>	<u>Dedicated</u>
Lead/Zinc in Soil (surface)	Spatula	plastic	Yes
Lead/Zinc in Soil (depth)	Thin-Walled Tube Sampler Bucket Auger	stainless steel	No
Lead/Zinc in Surface Water	Sample Bottle	polyethylene	Yes
Lead/Zinc in Drinking Water	Sample Bottle	polyethylene	Yes

Decontamination steps for non-dedicated sampling equipment:

- Physical removal with paper towels
- Non-phosphate detergent wash
- 10% Nitric Acid Solution
- Distilled/deionized water rinse
- Air dry

4.2 Sampling Design

The proposed sampling design is depicted on the attached Proposed Sample Location Map (Figure 3), and is based on the following rationale. Sample stations will be located on a systematic sampling grid (i.e., a 50 ft X 50 ft sampling square) that sufficiently covers the designated sampling areas. The grid system will be set up using both north/south and east/west baselines that will be measured from permanent landmarks for future relocation. A survey instrument will be used to set the baselines, and additional sample stations will be located using a fiberglass tape measure and a compass.

XRF instruments will be used during the initial field screening, to determine the boundaries of the contaminated zones in each area. XRF analysis is based on recording the specific fluorescent X-rays given off by a sample after the sample has been exposed or excited by a radioactive source. Specific elements, in this case lead or zinc, will produce a characteristic fluorescent X-ray spectrum that can be semi-quantified by comparison to reference samples through an internal calibration model.

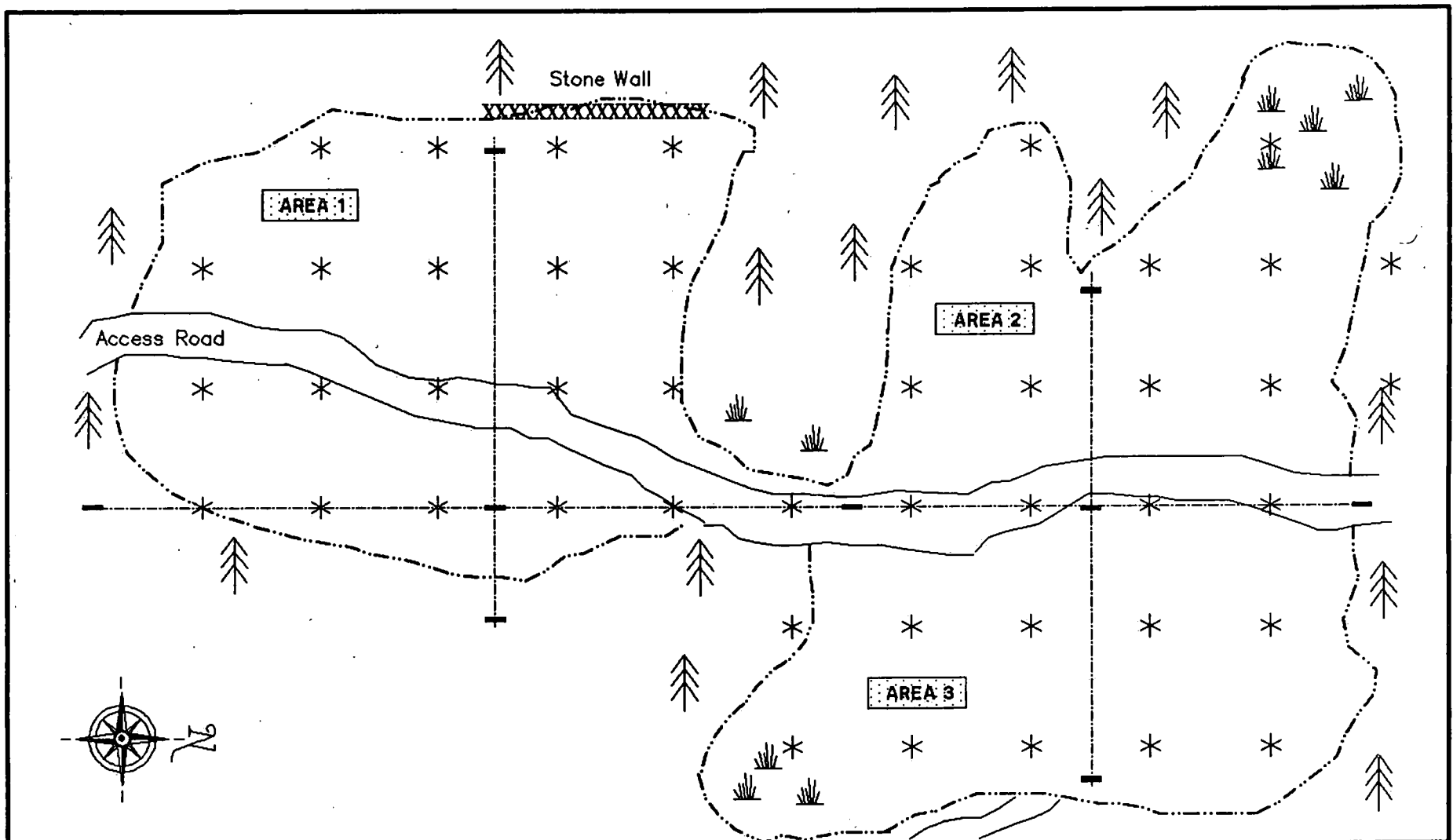


FIGURE 3

**Proposed Sample Location Map
HARCO PROPERTY
Wilton, Connecticut
March 1992 Sampling Survey**

LEGEND

- Survey Control Points
 - * Systematic Grid Sampling Points
 - Sampling Survey Baselines
 - - - Sampling Area Boundary (approximate)
 - AREA 1 Sampling Area Designations
- NOT TO SCALE

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The XMET will be used to conduct the initial screening of the surface sample location. The XMET will be calibrated in accordance with the Operations Manual prepared by the Region IV TAT, using samples of known concentration collected during the January 28, 1992 site visit. The concentration of these samples were determined using ICP analyses. The objective of the XMET screening is to define the area on site where the lead concentrations in surface soil are higher than the EPA established cleanup levels of 500-1000 ppm. The boundary defined by the XMET screening will then be sampled for more precise analysis with the SEFA-P, to further define the surface boundaries of the contaminated zones. Confirmation of the SEFA-P results will be determined by analysis using ICP Method 200.7 CLP-M.

Once the surface boundary to the contamination zone is determined, depth samples will be randomly selected inside the contamination zone. Samples will be collected from various depths ranging from 2 - 8 feet. They will be analyzed using both the XMET and the SEFA-P instruments, and confirmation samples will be collected for ICP analysis. The ICP analysis will be performed by either NERL or a subcontracted laboratory.

Additionally, several samples will be collected from the surface water of streams that run off the site, from breakouts of groundwater at the site, and drinking water from houses that abut the site. These samples will be analyzed by NERL to determine lead and zinc concentrations. This information will aid in determining the health and environmental risks associated with the site.

Finally, three samples for TCLP analysis will be collected from soil in the areas determined as contaminated based on XRF results. One TCLP sample will be a composite of the metal hydroxide sludge material, one will be collected from the location with the highest lead or zinc concentrations, and the last shall be determined by the OSC while at the site. These samples will be analyzed by a subcontracted laboratory to determine leachable lead and zinc concentrations. This information will aid in determining disposal options of the sludge material.

4.3 Sample Documentation

All sample documents must be completed legibly, in black ink. Any corrections or revisions must be made by lining through the incorrect entry and by initializing the error.

Field Log Book

The field log book is essentially a descriptive notebook detailing site activities and observations so that an accurate account of field procedures can be reconstructed in the writer's absence. All entries should be dated and signed by the individuals making the entries, and should include (at a minimum) the following:

- Site name and project number
- Name(s) of personnel on-site
- Dates and times of all entries (military time preferred)
- Descriptions of all site activities, including site entry and exit times
- Noteworthy events and discussions
- Weather conditions
- Site observations
- Identification and description of samples and locations
- Subcontractor information and names of on-site personnel
- Date and time of sample collections, along with chain-of-custody information
- Record of photographs
- Site sketches.

Sample Labels

Sample labels must clearly identify the particular sample, and should include the following:

- Site name and number
- Date/time sample was taken
- Sample preservation
- Initial of sampler(s)
- Analysis requested
- Sample location/station.

Sample labels must be securely affixed to the sample container. Tie-on labels can be used if properly secured.

Chain of Custody Record

A chain of custody record must be maintained from the time the sample is taken to its final deposition. Every transfer of custody must be noted and signed for, and a copy of this record kept by each individual who has signed. When samples (or groups of samples) are not under direct control of the individual responsible for them, they must be stored in a locked container with a chain of custody seal.

The chain of custody record for samples should include (at minimum) the following:

- Project Name, city and state (**)
- Name(s) and signature(s) of sampler(s)
- Sample station designation
- Date and time of collection
- Sample type (composite or grab)
- Station location
- Number and Volume of sample containers
- Analytical parameter and matrix of sample
- EPA sample identification number
- Signature(s) of any individual(s) with control over samples.

(**) NOTE: If the samples are being sent to a private subcontracted laboratory, then the Project Name, city and state information will not be written on the chain of custody record to ensure confidentiality. Instead, the project will be identified by a TDD number used for the subcontract.

Chain of Custody Seals

Chain of custody seals demonstrate that a sample container has not been tampered with, or opened. The individual in possession of the sample(s) must sign and date the seal, affixing it in such a manner that the container cannot be opened without breaking the seal. The chain of custody seal must be maintained from the time the sample is collected until the time the container is opened in preparation for analysis.

4.4 Soil Sampling

4.4.1 Surface Soil Sampling

Collection of surface soil samples will be accomplished with plastic spatulas. Surface debris will be removed, then a plastic spatula will be used to collect the sample. The sample will be placed in either a plastic bag for on-site analysis, or a 8-ounce (oz) glass jar for off site analysis. The samples will then be split following methods listed in section 4.7. After splitting the samples, the soil samples to be analyzed off site will be placed in 4-oz jars and preserved by placing them on ice.

4.4.2 Depth Soil Sampling

Sampling at the shallow depths of 0 - 4 feet will be accomplished with augers and thin-walled tube samplers. This system consists of an auger, a series of extensions, a "T" handle, and a thin-walled tube sampler. The auger will be used to bore a hole to the desired sampling depth, and then withdrawn. The auger tip will then be replaced with a tube core sampler, lowered down the bore hole, and driven into the soil at the completion depth. The core will then be withdrawn and the sample collected will be placed in a plastic bag for on-site analysis or in a 8-oz glass jar for off site analysis. The samples will then be split following methods listed in section 4.7. After splitting the samples, the soil samples to be analyzed off site will be placed in 4-oz jars and preserved by placing them on ice.

For greater depths of 4 - 8 feet, several other types of augers will be available. These include: bucket type, posthole, and continuous flight (screw) augers. If either the bucket type or posthole auger is used, then the sample will be collected directly from the auger at the desired depth and the sample collected will then be placed in a plastic bag for on-site analysis or in a 8-oz glass jar for off site analysis. The samples will then be split following methods listed in section 4.7. After splitting the samples, the soil samples to be analyzed off site will be placed in 4-oz jars and preserved by placing them on ice. If a continuous flight auger is used, then the auger will bore a hole to the desired sampling depth, then removed and a tube core sampler will be lowered down the bore hole, and driven into the soil at the completion depth. The core will then be withdrawn and the sample collected will then be placed in a plastic bag for on-site analysis or in a 8-oz glass jar for off site analysis. The samples will then be split following methods listed in section 4.7. After splitting the samples, the soil samples to be analyzed off site will be placed in 4-oz jars and preserved by placing them on ice. The choice of which auguring system to be used will be determined on-site based on the subsurface conditions.

4.5 Surface Water Sampling

The direct collection method will be followed in the collection of surface water samples from streams and breakouts located on the site. The procedure will be to collect several liters of surface water by submerging a dedicated 1-liter plastic bottle into an undisturbed area of the stream, or directly under the breakout. The collected sample will then be homogenized by vigorous shaking, then alternating aliquots will be placed in two 1-liter plastic bottles. The procedure will be repeated until both plastic bottles each contain 1 liter of sample. After splitting the sample, each aliquot will be preserved with nitric acid (NO_3) to a $\text{pH} < 2$, and stored on ice.

4.6 Drinking Water Sampling

Drinking water samples will be collected at a point in the water system prior to any treatment device. Prior to collecting samples, the drinking water taps will be purged for approximately ten minutes. Then a 1-liter plastic bottle will be filled from the purged tap. The sample will then be preserved with nitric acid (NO_3) to a $\text{pH} < 2$, and stored on ice.

4.7 Sample Preparation and On-Site Analysis

4.7.1 Split Sampling of Soils for On-site Analysis

The soil sample will be removed from the plastic bag and placed onto a clean plastic weight boat, which will then be placed in the microwave oven for approximately 4 minutes to dry the sample. The stones will be removed, then the dry sample will then be crushed with a non-metallic mortar and pestle to homogenize the sample. The homogenized sample will then be split into two samples. One-half of the sample will be placed in a 40-ml glass vial for the potentially responsible party (PRP), and the other half of the sample will be placed in a sample cup and analyzed at the site using the SEFA-P.

4.7.2 Split Sampling of Soils for Off site Analysis

The following procedures will be followed in splitting these soil samples:

- The sample is poured onto a clean surface forming a cone.
- The cone is flattened, and divided into quarters.
- The opposite corners are mixed, then the cone is reformed.
- The above procedure will be repeated five times. The sample is now homogeneous.
- Alternate scoops of homogeneous sample will be placed into two 4-oz jars, except for TCLP samples which will be placed in 16-oz jars. One jar is for the PRP and the other is for the off site analysis.

4.7.3 Split Sampling of Water Samples

This procedure was detailed in sections 4.5 and 4.6.

4.8 Sample Handling and Shipment

Each of the sample bottles will be sealed and labeled according to the following protocol. Caps will be secured with custody seals. Bottle labels will contain all required information including sample number, time and date of collection, analysis requested, and preservative used. Sealed bottles will be placed into individual resealable plastic bags, then placed into large metal or plastic coolers, and padded with an absorbent material such as vermiculite.

Additional procedures are required for shipping hazardous waste samples including use of metal paint cans and clips, and the use of proper shipping labels. Detailed procedures can be found in the Roy F. Weston, Inc. document entitled *A Quick Guide to Shipping Hazardous Material, Issued 1988*.

All sample documents will be affixed to the underside of each cooler lid. The lid will be sealed and affixed on at least two sides with EPA custody seals so that any sign of tampering is easily visible.

4.9 Schedule of Activities

The proposed schedule of work is as follows:

<u>Activity</u>	<u>Start Date</u>	<u>End Date</u>
Site Investigation Planning	01/02/92	03/30/92
Mobilization to the Site	03/27/92	03/30/92
Site Activities	03/30/92	04/01/92
Site Visit Memorandum	04/02/92	04/10/92
Draft Report Preparation	04/02/92	05/06/92
Final Report Preparation	05/06/92	05/15/92

5.0 Project Organization and Responsibilities

The TAT Task Leader, Paul Killian, is the primary point of contact with the EPA OSC. The TAT Task Leader is responsible for the development and completion of the sampling QA/QC plan, project team organization, and supervision of all project tasks, including reporting and deliverables per the TDD requirements set forth by the EPRB of the U.S. EPA.

The following personnel will be conducting on-site activities for this project:

<u>Personnel</u>	<u>Responsibility</u>
Paul Groulx	EPA OSC
Royal Nadeau	EPA ERT
Timothy Jones	XMET Operation/Sampling
Paul Killian	TAT Task Leader/SEFA-P Operator
Zoe Horton	Sampling and Documentation

The following laboratories will be providing the following analyses:

<u>Lab Name/Location</u>	<u>Lab Type</u>	<u>Parameters</u>
EPA NERL 60 Westview Street Lexington, MA 02173	Environmental Services Division	Lead (ICP, GFAA) Zinc (ICP)
Private Laboratory	To Be Determined	TCLP (Lead, Zinc)

6.0 Quality Assurance Requirements

The on-site screening activities with the XMET will employ the following QA1 objectives: sample documentation; instrument calibration/performance check; and the determination of a detection limit, if appropriate. A log of all instrument readings for each sample location will be prepared.

The on-site analyses with the SEFA-P XRF will employ the following modified QA2 objectives: sample documentation, instrument calibration/performance check; periodic field duplicate samples, and the determination of a detection limit, if appropriate. A chain-of-custody record, sample cards and sample documentation will be prepared.

The laboratory analyses performed by the subcontracted laboratory, will employ the following modified QA2 objectives: sample documentation, instrument calibration/performance check, preparation blank, matrix spike, laboratory duplicate, and the determination of a detection limit. The laboratory analyses performed by NERL will employ mid-level for the soil samples and low-level for the water samples. The samples designated as mid-level will be analyzed to determine definitive identification and quantitation of contaminants. Mid-level QA protocols will include a laboratory blank, matrix spike, and multiple standards. Samples designated as low-level are usually drinking water samples or samples collected for enforcement purposes. Low-level QA protocols will include a laboratory blank, matrix spike and matrix spike duplicate, and multiple standards.

A QA/QC Analysis and Objectives Summary Table (Table 2) is provided to summarize the analytical method, compound, detection limit, duplicates, spikes, laboratory control sample (LCS), and QA objectives for each type of sample collected. This table describes the appropriate data quality indicators based on the QA/QC objective determined in Section 3.0 which will be used during the evaluation of the laboratory data package.

7.0 Deliverables

A report documenting all project activities will be generated by TAT. Any modifications to the practices in the original sampling QA/QC plan will be documented in an addendum to this report in order to reflect what was actually done in the field. Based on visual observations and exact sampling locations selected in the field, a final sampling location map will be prepared and included in the addendum.

8.0 Data Validation

A data quality review of the sample analyses generated by the private subcontracted laboratory will be conducted by TAT under an assigned TDD. The data will be evaluated according to OSWER Directive 9360.4-01 (April 1990 - Interim Final), *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures*. The data quality review of sample analyses generated by NERL will be conducted by EPA personnel.

QA1 objectives will be evaluated for calibration and detection limits.

TABLE 2
QA/QC ANALYSIS AND OBJECTIVES SUMMARY
HARCO PROPERTY SITE
WILTON, CONNECTICUT
MARCH 31, 1992 VISIT

SAMPLE	ANALYTICAL METHOD	COMPOUND	DETECTION LIMIT (ppm)	QA/QC			QA OBJECTIVE (2)
				DUPLICATES	SPIKES	LCS (1)	
Surface Soil	XMET XRF	Lead	300	1:20	NA	NA	QA1
	XMET XRF	Zinc	100	1:20	NA	NA	QA1
	SEFA-P XRF	Lead	100	1:20	NA	NA	QA2
	SEFA-P XRF	Zinc	50	1:20	NA	NA	QA2
	ICP	Lead	1	1:20	1:20	1:20	Mid
	ICP	Zinc	1	1:20	1:20	1:20	Mid
Depth Soil	XMET XRF	Lead	300	1:10	NA	1:20	QA2
	XMET XRF	Zinc	100	1:10	NA	1:20	QA2
	SEFA-P XRF	Lead	100	1:10	NA	1:20	QA2
	SEFA-P XRF	Zinc	50	1:10	NA	1:20	QA2
	ICP	Lead	1	1:20	1:20	1:20	Mid
	ICP	Zinc	1	1:20	1:20	1:20	Mid
Surface Water	GFAA	Lead	0.005	1:20	1:20	1:20	Low
	ICP	Zinc	0.020	1:20	1:20	1:20	Low
Breakout Water	GFAA	Lead	0.005	1:20	1:20	1:20	Low
	ICP	Zinc	0.020	1:20	1:20	1:20	Low
Drinking Water	GFAA	Lead	0.005	1:20	1:20	1:20	Low
	ICP	Zinc	0.020	1:20	1:20	1:20	Low
TCLP	ICP	Lead	1	1:20	1:20	1:20	QA2
	ICP	Zinc	1	1:20	1:20	1:20	QA2

(1) - LCS = Laboratory Control Sample

(2) - QA Objectives of Mid and Low are for samples analyzed at NERL

9.0 References

Roy F. Weston, Inc., *A Quick Guide To Shipping Hazardous Materials, Issued 1988, (Updated Version of 1987)*, 1988.

Roy F. Weston, Inc., Technical Assistance Team, Region I, *Draft Inter-Office Memorandum, on Sampling Protocols*, June 6, 1991.

Roy F. Weston, Inc., Technical Assistance Team, Region I, *Harco Property January 28, 1992 Site Visit Memorandum*, Document No. M00014, March 1992.

Roy F. Weston, Inc., Technical Assistance Team, Region I, *Removal Program Preliminary Assessment/Site Investigation for Harco Property Site, Wilton, CT*, Document No. TAT 01-N-00723, November 1990.

Roy F. Weston, Inc., Technical Assistance Team, Region I, *Standard Operating Procedures For The HNU SEFA-P XRF Analyzer*, Document No. TAT 01-N-00709, November 1990.

Roy F. Weston, Inc., Technical Assistance Team, Region VI, *XMET 880 X-Ray Fluorescence Operator's Manual*, James D. Hawkins, TDD # 04-9101-0030-1319, March 31, 1991.

U.S. Environmental Protection Agency, OSWER Directive 9355.4-02A (January 1990), *Supplement to Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites*.

U.S. Environmental Protection Agency, OSWER Directive 9360.4-01 (April 1990 - Interim Final), *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures*.

U.S. Environmental Protection Agency, OSWER Directive 9360.4-01 (November 1991 - Interim Final), *Removal Program, Representative Sampling Guidance, Volume I: Soil*.

United States Geological Survey, Bethel, Connecticut Quadrangle, 7.5 minute series (Topographical) 1971, photorevised 1984.

United States Geological Survey, Norwalk North, Connecticut and New York Quadrangle, 7.5 minute series (Topographical) 1960, photorevised 1971.

Wilton, CT Department of Environmental Health, Memorandum to Wilton, CT Planning and Zoning Commission, RE: G & D Construction - Harco Property Subdivision, January 20, 1986.

**HARCO PROPERTY SITE
SAMPLING QUALITY ASSURANCE/
QUALITY CONTROL PLAN
ADDENDUM
WILTON, CONNECTICUT**

Prepared For:

**U.S. Environmental Protection Agency
Region I
60 Westview Street
Lexington, Massachusetts 02173**

CONTRACT NO. 68-W0-0036

TAT-01-N-01096

TDD NO. 01-9201-01D

Prepared By:

**Roy F. Weston, Inc.
Technical Assistance Team
Region I**

May 1992

TABLE OF CONTENTS

	<u>PAGE</u>
List of Tables	iii
List of Figures	iii
1.0 Introduction	1
2.0 Modifications	1
Section 4.0 Table 1	1
Section 4.2 Sampling Design	1
Section 4.4.1 Surface Soil Sampling	5
Section 4.4.2 Depth Soil Sampling	5
Section 4.7 Sample Preparation and On-Site Analysis	7
Section 5.0 Project Organization and Responsibilities	7
Section 8.0 Data Validation	7

LIST OF TABLES

	<u>PAGE</u>
Table 1 - Revised Field Sampling Summary	2

LIST OF FIGURES

	<u>PAGE</u>
Figure A - Sampling Grid	3
Figure B - Soil Sample Locations	4
Figure C - Aqueous Sample Locations	6

1.0 INTRODUCTION

The purpose of this report is to document the modifications made in the field to the Harco Property Site, Sampling QA/QC Plan January 1992, Revised March 1992 (TAT Document Number TAT-01-N-00991). These changes are presented section by section.

2.0 MODIFICATIONS

Section 4.0. Table 1

The following changes were made to the number of each sample collected:

- Fifty surface soil samples were analyzed for lead and zinc using the Outokumpu XMET 880 X-Ray Fluorescence (XRF) Analyzer (XMET).
- No surface samples were collected for either HNU Systems, Inc. SEFA-P X-Ray Fluorescence (XRF) Analyzer (SEFA-P) analyses or Off-site analyses.
- Thirty-three subsurface samples were collected for XMET and SEFA-P analyses. These samples were collected in Ziplock bags.
- Six subsurface samples (one a field duplicate) were submitted to U.S. EPA New England Regional Laboratory (NERL) for confirmation analysis. In addition, two rinsate blanks were collected: one for samples collected with the Thin-walled Tube Sampler, and the other for samples collected with the Bucket Auger.
- Five surface water samples, two breakout water samples, and five drinking water samples were collected from the site and surrounding area. No field duplicates were collected from any of the sample locations.

All of these changes were incorporated into a revised Table 1.

Section 4.2. Sampling Design

The following changes were made to the Sampling Design:

- The actual sampling grid is depicted in Figure A.
- The actual soil sample locations are depicted in Figure B.
- The XMET was used to analyze for lead and zinc at each of the grid points to determine surface contamination. Due to problems with calibrating the SEFA-P, this instrument was not used in the field. However, the problem was corrected after returning to the TAT office, and the SEFA-P was utilized to determine lead and zinc concentrations in the subsurface soil samples.

TABLE 1 - REVISED
FIELD SAMPLING SUMMARY
HARCO PROPERTY SITE
WILTON, CONNECTICUT
MARCH 31, 1992 VISIT

							QC EXTRAS		TOTAL
SAMPLE LOCATION	ANALYSIS	SAMPLE VOLUME	CONTAINER	PRESERVATIVE	HOLDING TIMES	SUBTOTAL SAMPLES	RINSATE BLANKS (2)	FIELD DUPLICATES	FIELD SAMPLES
Surface Soil	XMET XRF	NA	NA	NA	180 days	50	NA	NONE	50
	SEFA-P XRF	20 gms	Ziplock	None	180 days	NONE	NA	NONE	NONE
	Off-Site (1)	10 gms	4-oz glass	ice	180 days	NONE	NA	NONE	NONE
Depth Soil	XMET XRF	NA	NA	NA	180 days	32	NA	1	33
	SEFA-P XRF	20 gms	Ziplock	None	180 days	32	NA	1	33
	Off-Site (1)	10 gms	4-oz glass	ice	180 days	5	2	1	8
Surface Water	Off-Site (2)	1 liter	1-l plastic	HNO3, ice	180 days	5	NA	0	5
Breakout Water	Off-Site (2)	1 liter	1-l plastic	HNO3, ice	180 days	2	NA	0	2
Drinking Water	Off-Site (2)	1 liter	1-l plastic	HNO3, ice	180 days	5	NA	0	5
TCLP Soil (4)	Off-Site (1)	250 gms	16-oz glass	ice	180 days	3	NA	0	3

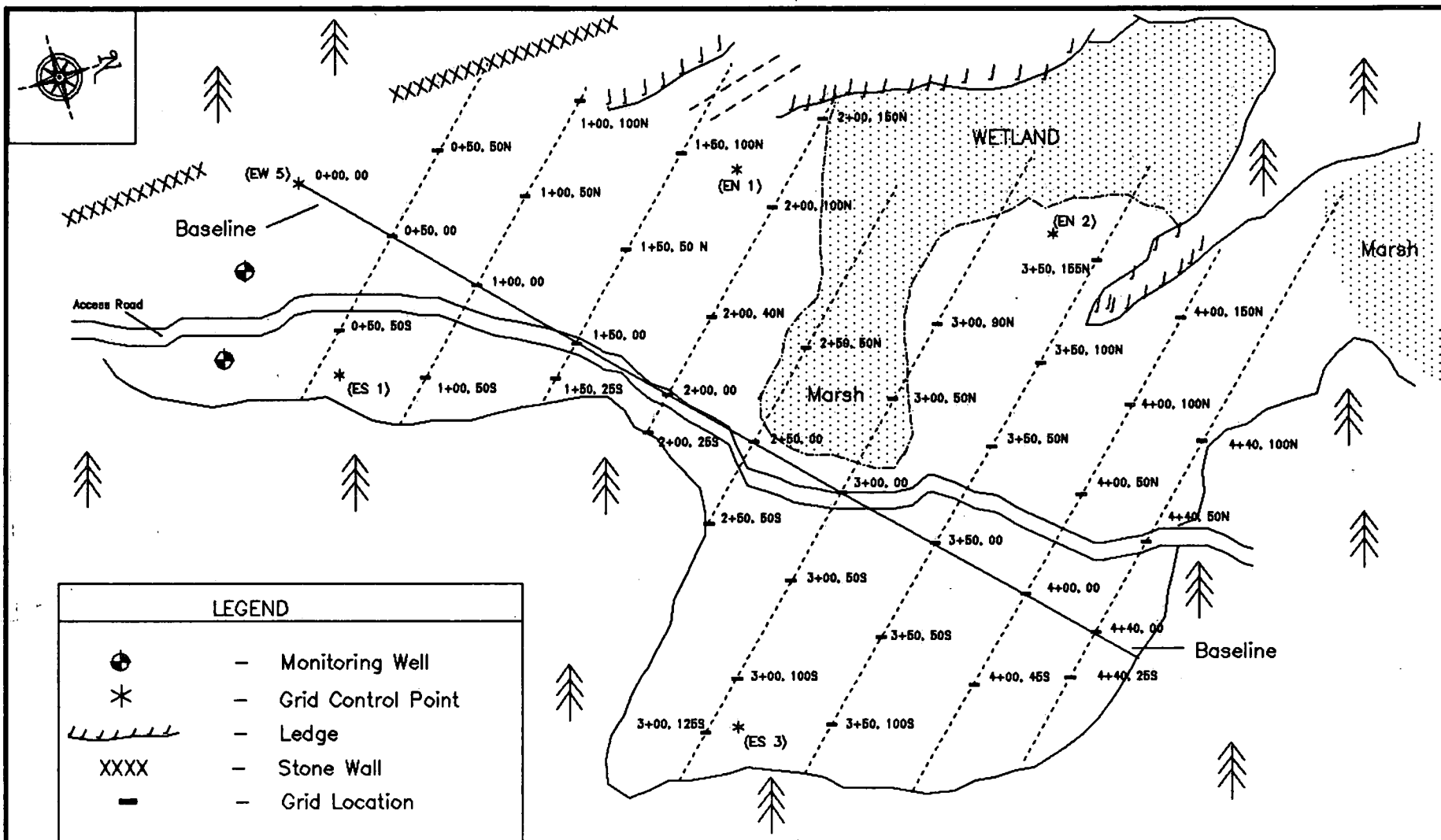
NA - Not Applicable. No sample is collected.

(1) - Lead and zinc are to be analyzed by ICP.

(2) - Lead is to be analyzed by GFAA and zinc by ICP.

(3) - Total volume required after the samples have been split.

(4) - TCLP analysis for lead and zinc.



NO SCALE

WESTON
 MANAGERS DESIGNERS/CONSULTANTS
 REGION I TECHNICAL ASSISTANCE TEAM

DRAWN
 Paul F. Killian

DATE
 05/92

PCS #
 1810

APPROVED *fw*

DATE
07/92

TDD #
 01-9201-01D

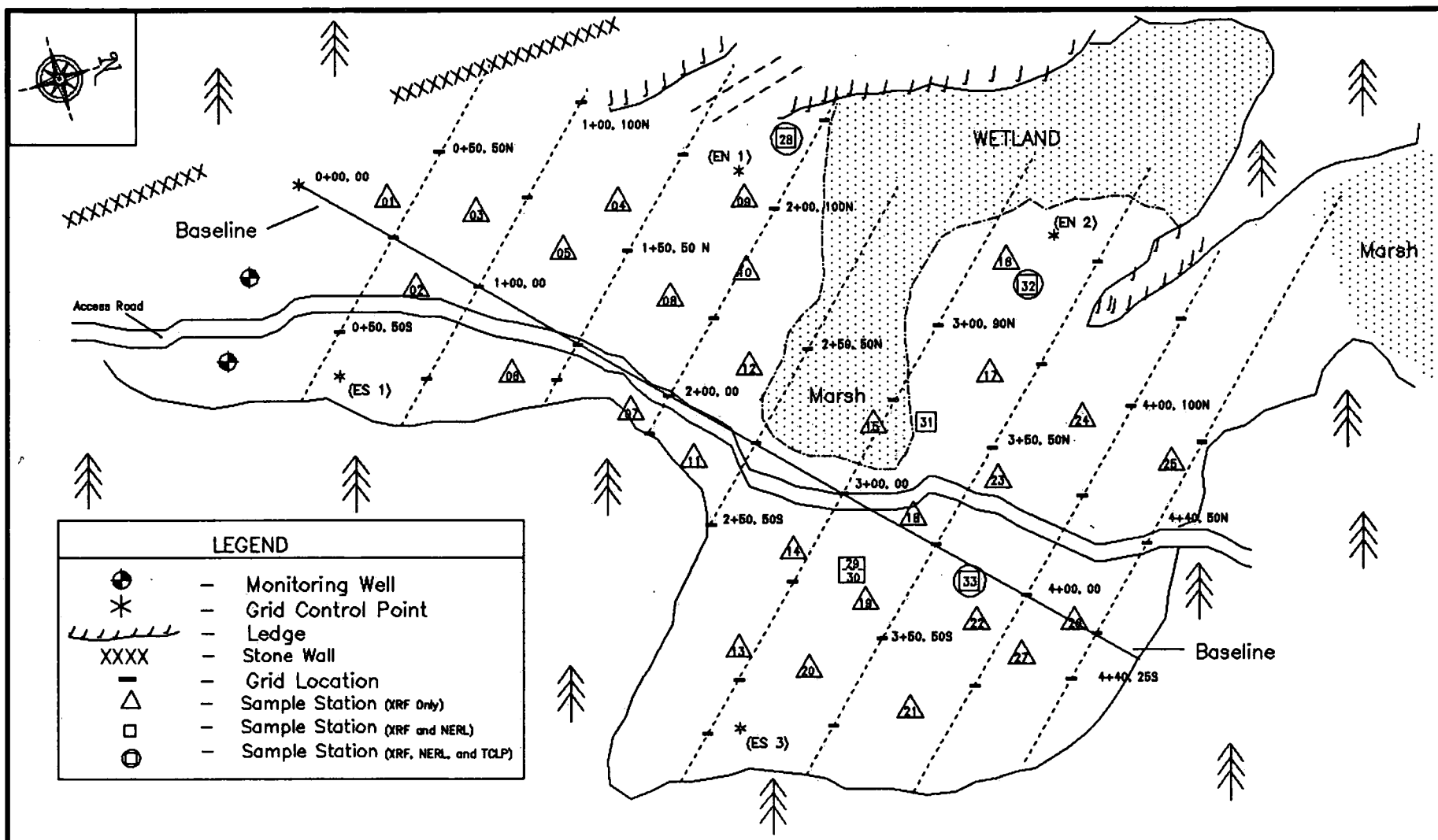


FIGURE B
Soil Sample Locations
HARCO PROPERTY
Wilton, Connecticut
March 1992 Sampling Survey

NO SCALE

WESTON
 MANAGERS DESIGNERS/CONSULTANTS
 REGION I TECHNICAL ASSISTANCE TEAM

DRAWN Paul F. Killian	DATE 05/92	PCS # 1810
APPROVED <i>[Signature]</i>	DATE <i>[Signature]</i>	TDD # 01-9201-01D

- Quadrants were created from the grid points. Four grid points made up one quadrant, which was referenced by the southeastern grid point (e.g. Quadrant 1+00, 50S is made from the four grid points 1+00, 50S; 1+00, 00; 0+50, 00; and 0+50, 50S).
- One sample station was randomly selected inside each quadrant. (See Figure B for sample locations.)
- Subsurface conditions (i.e., soil texture, groundwater level, and depth) were determined at each sample station with a hand auger. The soil collected was composited and stored in Ziplock bags for analysis with the XMET and the SEFA-P.
- Six additional station locations (one a field duplicate) were selected to collect samples for confirmational analysis at NERL. (See Figure B for sample locations.) These locations were based on the XMET results and on the subsurface conditions. The soil from each depth were composited and aliquots were stored in Ziplock bags for analysis with the XMET and the SEFA-P, or in 4-oz jars for analysis at NERL.
- Aliquots from three of the Six stations mentioned above were collected for TCLP analysis at Laboratory Resources, Inc., Brooklyn, Connecticut (a private subcontracted laboratory). (See Figure B for sample locations.)
- The aqueous sample locations are depicted in Figure C.

Section 4.4.1. Surface Soil Sampling

- No surface soil samples were collected. It was decided that more beneficial information would be obtained from depth samples.

Section 4.4.2. Depth Soil Sampling

- All sample stations had depths of less than 4 feet. Sampling was accomplished using several methods. Samples collected to determine subsurface conditions were collected using either a hand auger, or a combination hand auger and thin-walled tube sampler. The hand auger was used to bore a hole to the desired depth, and then withdrawn. The auger tip was then replaced with a tube core sampler, lowered down the bore hole, and driven into the soil at the completion depth. In cases where rocks prevented the use of the tube core sampler, the sample was collected off the hand auger. The soil, collected from each depth, was then composited in a plastic bowl. An aliquot of the composite was placed in a Ziplock bag for XMET and SEFA-P analyses.

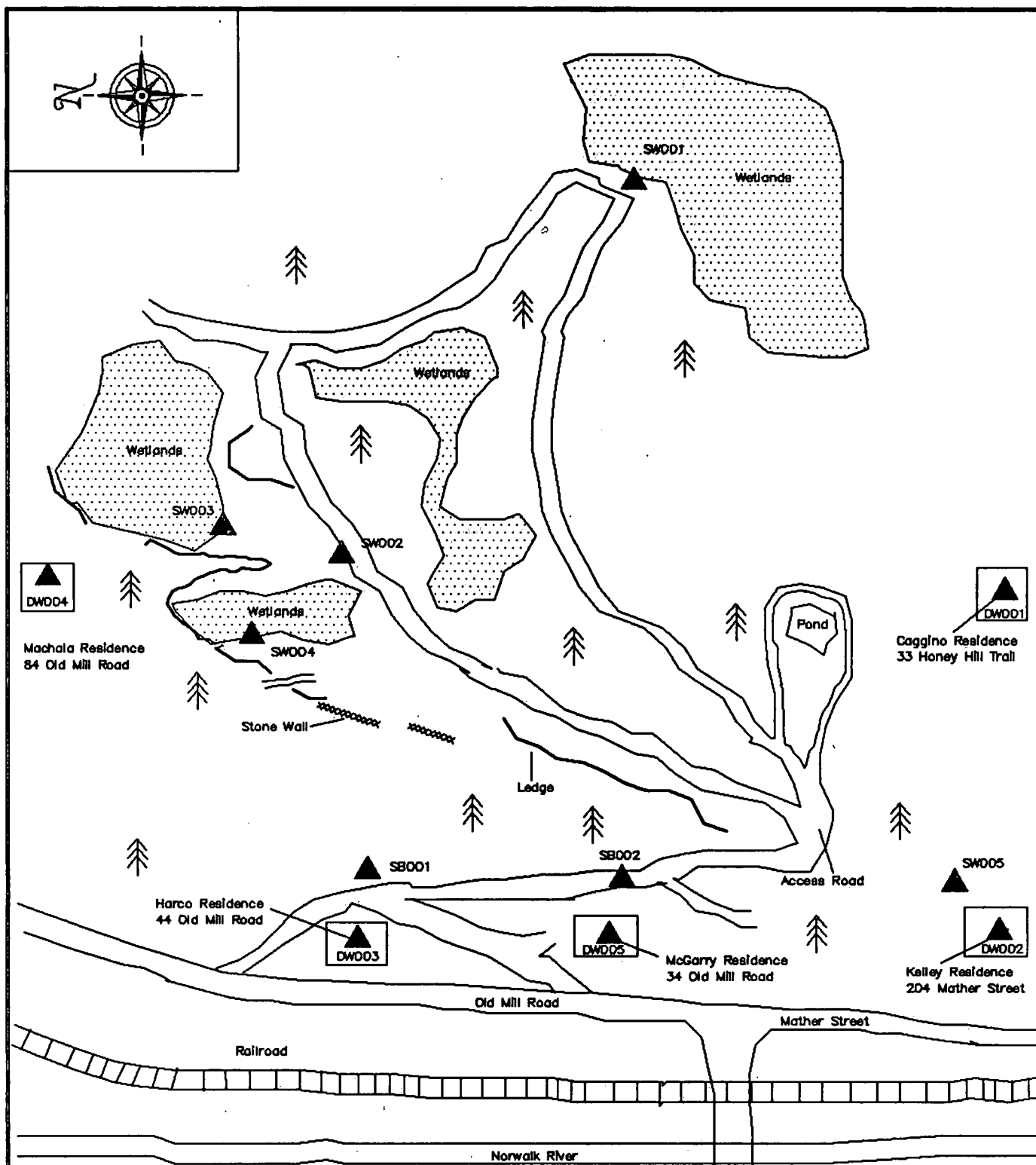


FIGURE C
Aqueous Sample Locations
HARCO PROPERTY
Wilton, Connecticut
March 1992 Sampling Survey

NO SCALE

WESTON
 MANAGERS DESIGNERS/CONSULTANTS
 REGION I TECHNICAL ASSISTANCE TEAM

DRAWN Paul F. Killian	DATE 05/92	PCS # 1810
APPROVED <i>[Signature]</i>	DATE <i>[Signature]</i>	TDD # 01-9201-01D

The bucket auger was used to collect samples for the five confirmational analysis at NERL and TCLP analysis at Laboratory Resources, Inc. The sample was collected directly from the bucket auger at the desired depth. The soil, collected from each depth, was then composited in a plastic bowl. An aliquot of the composite was placed in a Ziplock bag for XMET and SEFA-P analyses. An aliquot of the composite was placed in a 4-oz jar for confirmation analysis at NERL. An aliquot of the composite was placed in a 16-oz jar for TCLP analysis at Laboratory Resources, Inc. for three of the samples.

Section 4.7. Sample Preparation and On-Site Analysis

- At the request of Costa Stergue, the potentially responsible party (PRP), no split samples were provided. None of the procedures outlined in this section were followed.

Section 5.0. Project Organization and Responsibilities

- TAT member Zoe Horton did not attend the site visit due to other tasks. Instead, TAT members Edward Coffey and George Stevens assisted with the site visit.
- Sampling of all aqueous samples were performed by OSC Groulx, to assist with a timely completion of the site visit.
- The private laboratory subcontracted to perform the TCLP analysis was Laboratory Resources, Inc., Route 205, The Regional Building, Brooklyn, Connecticut 06234.
- Laboratory Resources, Inc., analyzed two of the three TCLP samples for arsenic, barium, cadmium, chromium, lead, mercury, nickel, selenium, silver, and zinc; the other TCLP sample was analyzed for only chromium, lead, nickel, and zinc.

Section 8.0. Data Validation

- The TCLP data from Laboratory Resources, Inc., was reviewed under TDD #01-9203-19, PCS #1765. (The actual laboratory analysis was performed under TDD #01-9203-L2, PCS #0315.)

B

APPENDIX B

HEALTH AND SAFETY PLAN

WESTON MAJOR PROGRAMS DIVISION
HEALTH AND SAFETY PLAN
EMERGENCY RESPONSE / SITE INVESTIGATION

TDD No. 01-9201-01C Site Name: HARCO PROPERTY
Site Address: Street No. Old Mill Road
City Wilton
County/State Fairfield, Connecticut
Site Contact / Phone No.: _____

Directions to Site: (Att. Map) Rt 95 S to RT 90 W (Mass Pike). Follow
RT 90 W until RT 84. Follow 84 W to RT 7, in
Danbury, CT. Follow RT 7 S to Honey Hill Rd, take
left onto Honey Hill, then left onto Mathers St. Mathers St
turns into Old Mill Road. site is located on the right

Historical/Current Site Information:

In 1970 CT Water Resource Commission granted a
permit to dispose of 800 cubic yards of metal hydroxide
sludge at Harco Property to the Gilbert & Bennett Manufacturing Co.
In Sept. 1990 PR/SF found several soils with lead > 1000 ppm
one as high as 84,500 ppm. This assessment to determine
lead contamination, collect samples for XRF.

Incident Type: () Air Release - _____
() Spill - _____
() Fire - _____
(☒) HW Site - EPA site ID L-4

Location Class : () Industrial () Commercial () Urban/Residential (☒) Rural

USEPA Contact: Paul Groulx Date of Initial Site Activities: 1/28/92
Original HASP: Yes _____ Modification Number: 2 (TOP #01-9201-01)
Lead TAT: Paul Killian Site Health & Safety Coordinator: Paul Killian

Response Activities/Duration (fill in as applicable)

Emergency Response:	() Perimeter Recon.	<u>N/A</u>
	() Site Entry	<u> </u>
	() Visual Documentation:	<u> </u>
	() Multi-media Sampling:	<u> </u>
	() Decontamination:	<u>↓</u>
 Assessment:	(<input checked="" type="checkbox"/>) Perimeter Recon.	<u>15 min</u>
	(<input checked="" type="checkbox"/>) Site Entry	<u>17 hours</u>
	(<input checked="" type="checkbox"/>) Visual Documentation:	<u>1 hour</u>
	(<input checked="" type="checkbox"/>) Multi-media Sampling:	<u>6 hours</u>
	(<input checked="" type="checkbox"/>) Decontamination:	<u>1 hour</u>

Physical Safety Hazards to Personnel

- ☐ Heat ☒ Cold ☐ Precipitation ☐ Confined Space ☒ Terrain
- ☒ Walking/Working Surfaces ☐ Fire & Explosion ☐ Oxygen Deficiency
- ☐ Underground Utilities ☐ Overhead Utilities ☐ Heavy Equipment
- ☐ Unknowns in Drums, Tanks, Containers ☒ Ponds, Lagoons, Impoundments
- ☒ Rivers, Streams ☐ Pressurized Containers, Systems ☐ Noise
- ☐ Illumination ☐ Nonionizing Radiation ☐ Ionizing Radiation

Biological Hazards to Personnel

- ☐ Infectious/Medical/Hospital Waste ☒ Non-domesticated Animals ☐ Insects
- ☐ Poisonous Plants/Vegetation ☐ Raw Sewage

Training Requirements

- ☒ 40 Hour General Site Worker Course with three days supervised experience.
- ☐ 24 Hour Course for limited, specific tasks with one day supervised experience.
- ☐ 24 Hour Course for Level D Site with one day supervised experience.
- ☒ 8 Hour Annual Refresher Health and Safety Training.
- ☒ 8 Hour Management/Supervisor Training in addition to basic training course.
- ☐ Site Specific Health and Safety Training.
- ☐ Pre-entry training for emergency response skilled support personnel.

Medical Surveillance Requirements

- ☒ Baseline initial physical examination with physician certification.
- ☒ Annual medical examination with physician certification.
- ☐ Site Specific medical monitoring protocol (Radiation, Pesticide, PCB, Metals).
- ☐ Asbestos Worker medical protocol.
- ☐ Exempt from medical surveillance:_____.
- ☒ Examination required in event of chemical exposure or trauma.

Physical Parameters	Chemical Contaminant	Chemical Contaminant	Chemical Contaminant	Chemical Contaminant
	Lead			
	fumes & Dust			
	* See Attached Sheet			
Exposure Limits: IDLH Level	_____ ppm 0.05 mg/m ³ PEL _____ ppm 0.15 mg/m ³ TLV _____ ppm _____ mg/m ³ IDLH	_____ ppm _____ mg/m ³ PEL _____ ppm _____ mg/m ³ TLV _____ ppm _____ mg/m ³ IDLH	_____ ppm _____ mg/m ³ PEL _____ ppm _____ mg/m ³ TLV _____ ppm _____ mg/m ³ IDLH	_____ ppm _____ mg/m ³ PEL _____ ppm _____ mg/m ³ TLV _____ ppm _____ mg/m ³ IDLH
Physical Form: Sol., Liq., Gas: Color	_____ Solid _____ Liquid _____ Gas _____ Color Compound Dependent	_____ Solid _____ Liquid _____ Gas _____ Color	_____ Solid _____ Liquid _____ Gas _____ Color	_____ Solid _____ Liquid _____ Gas _____ Color
Odor	Compound Dependent			
Flash Point: Flammable Limits	_____ Degrees F or C _____ % UEL _____ % LEL Compound Dependent	_____ Degrees F or C _____ % UEL _____ % LEL	_____ Degrees F or C _____ % UEL _____ % LEL	_____ Degrees F or C _____ % UEL _____ % LEL
Vapor Press. Vapor Dens.	_____ mm/Hg _____ Air = 1 Compound Dependent	_____ mm/Hg _____ Air = 1	_____ mm/Hg _____ Air = 1	_____ mm/Hg _____ Air = 1
Specific Gravity	Compound Water = 1 Dependent	_____ Water = 1	_____ Water = 1	_____ Water = 1
Solubility	Compound Dependent			
Incompatible Materials	Strong oxidizers, hydrogen Peroxides, active metals			
Route of Exposure	<input checked="" type="checkbox"/> Inh _____ Abs <input checked="" type="checkbox"/> Con <input checked="" type="checkbox"/> Ing	_____ Inh _____ Abs _____ Con _____ Ing	_____ Inh _____ Abs _____ Con _____ Ing	_____ Inh _____ Abs _____ Con _____ Ing
Symptoms of Acute Exposure	Leads, INSOM, pal eye, grains, anor, low-weight malnut, abdomen pain, colic, anemia, ging (and lines)			
First Aid Treatment	eye: Irr Emmet Skin: Soap flush Breath: Ant Resp Swallow: med ATTN			
Ion Potential	Compound _____ eV Dependent	_____ eV	_____ eV	_____ eV
Instruments For Detection	_____ PID w/ _____ Probe _____ FID _____ CGI _____ RAD _____ Det Tube _____ Ph Other _____ XRF	_____ PID w/ _____ Probe _____ FID _____ CGI _____ RAD _____ Det Tube _____ Ph Other _____	_____ PID w/ _____ Probe _____ FID _____ CGI _____ RAD _____ Det Tube _____ Ph Other _____	_____ PID w/ _____ Probe _____ FID _____ CGI _____ RAD _____ Det Tube _____ Ph Other _____

Lead

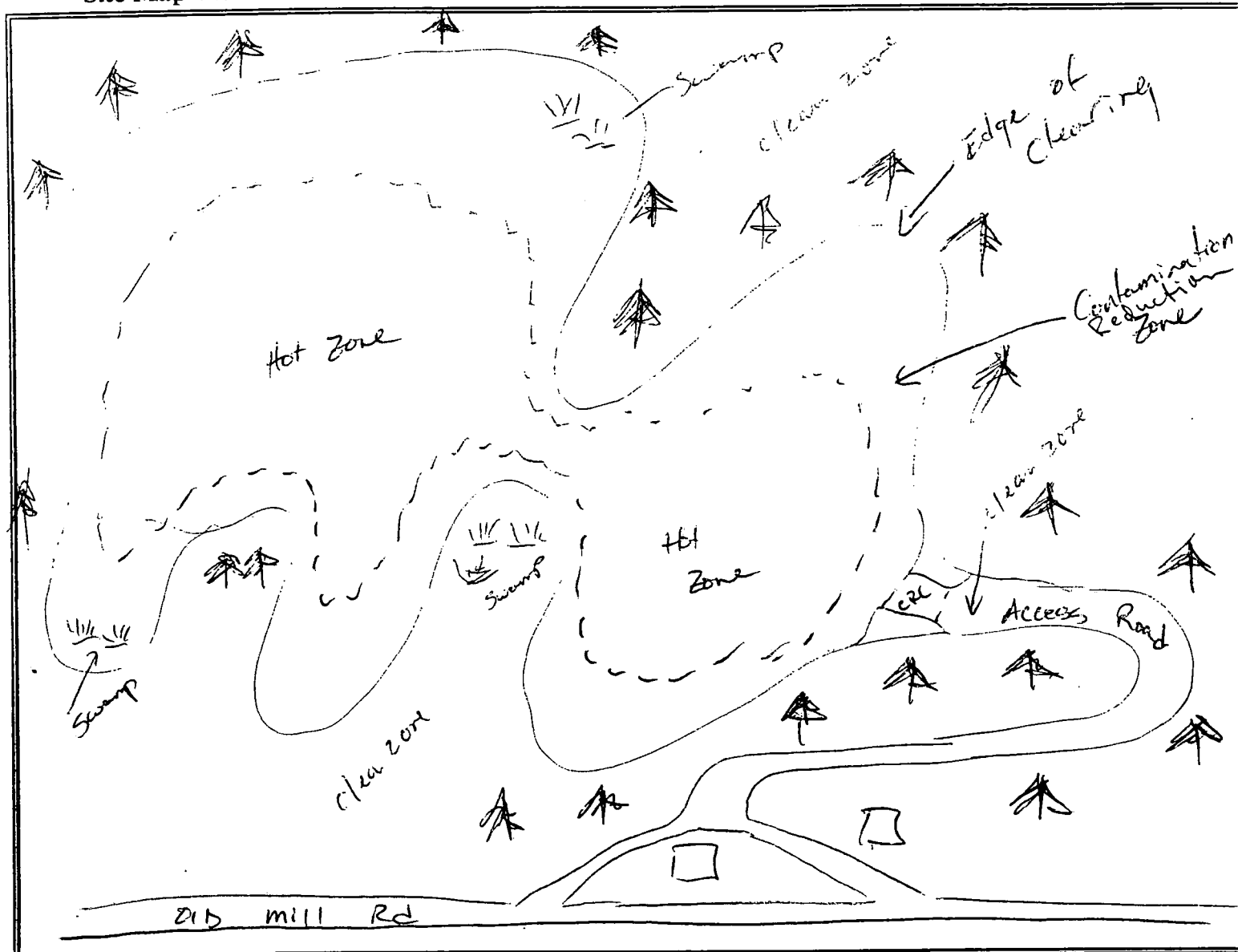
Lead and other inorganic lead compounds are widely used in industry. The materials include metallic lead, lead salts and lead oxides. These compounds have various appearances, and are frequently white, powdery solids. The TLV for lead compounds is 0.05 mg/m^3 .

Health Hazards

Lead compounds can enter the body through inhalation/ingestion of dusts or fumes and skin and eye contact. Early symptoms of lead exposure are muscle fatigue and aching, headache and digestive problems such as nausea and constipation. Later symptoms include abdominal cramping, severe constipation and characteristic "wrist drop" (weakness of grip), and "lead line" on the gums. Other symptoms include anemia and weakness. Effects of the central nervous system are brought about by inhalation of large quantities of lead. These include severe headache, convulsions, coma, and delirium. Kidney function can also be adversely affected.

Site Control Measures

Site Map with work zones:



Decontamination Procedures

- () Wet Decontamination - using: _____
(✓) Dry Decontamination

Description of Site Specific Decontamination

Plan: Disposable outer wear (i.e. Tyvek) will be worn and disposed of each day.

Additionally, soap and water rinse will be available if necessary.

Adequacy of decontamination determined by: Visual Inspection

Personal Protective Equipment

TASK TO BE PERFORMED/AIR MONITORING REQUIRED	ANTICIPATED LEVEL OF PROTECTION	TYPE OF CHEMICAL PROTECTIVE COVERALL	INNER GLOVE OUTER GLOVE BOOT COVER	TYPE OF APR CARTRIDGE OR CANISTER
Screening & Sampling 1, 2, 3, or 4	D	Cotton coveralls Tyvek	Surgical & cotton gloves nitrile gloves when sampling	N/A
Air monitoring equipment = HNU/OVA (whichever available) and mini ram				

Frequency and Types of Air Monitoring: () Continuous () Routine - _____ (✓) Periodic - _____

DIRECT READING INSTRUMENTS	COMBUSTIBLE GAS/OXYGEN METER (1)	RADIATION SURVEY METER/PROBE (2) previously screened	PHOTOIONIZATION DETECTOR/PROBE (3)	FLAME IONIZATION DETECTOR (4) (at OSC request)	CHEM. DETECTOR TUBE (5) mini Ram
ID NUMBER				TAT # 5	
CAL. DATE				4/1/92	
TAT MEMBER				Killian	
ACTION LEVEL	≥ 20%LEL ≤ 19.5%, ≥ 23% O ₂ - LEAVE	3X BACKGRND - CAUTION; 1 MR/HR-LEAVE	UNKNOWN 0-5 UNITS: "C" 5-500: "B"	UNKNOWN 0-5 UNITS: "C" 5-500: "B"	PEL/TLV COMPARE W/PF

Emergency Phone Numbers

Emergency Contact	Location	Phone Number	Notified
Hospital	Norwalk Hospital Maple St Norwalk CT	203-852-2000	N
Ambulance	Wilton, CT	911	N
Police	Wilton, CT	911	N
Fire Dept.	Wilton, CT	911	N

Chemical Trauma Capability? (✓) Yes () No If no, closest backup: _____ Phone: _____

Directions to Hospital (attach map) - Route verified by: _____ Date: 1/1/

From Site: TAKE left onto old mill Rd, right onto Mathews St, left onto RT 7 South
TAKE RT 7 S into Norwalk then right onto New Canaan Ave, left onto Riverside Ave,
(Riverside turns into Van Buren Ave) Take left onto maple st, Hospital is on the left

Additional Emergency Phone Contacts

Contact	Phone Number
WESTON 24 hr. Hotline	215-524-1925 215-524-1926
WESTON Medical Emergency Service	513-421-3063
Chemtrec	800-424-9300
ATSDR	404-639-0615
ATF (explosives information)	800-424-9555
National Response Center	800-424-8802
National Poison Control Center	800-942-5969

HASP prepared by: Paul Killian Date: 1/15/92 *

Pre-Response/Entry Approval by: [Signature] Date: 4/22/92

Verbal Approval/Modification to Original HASP by: _____ Date: 1/1/

* Date original safety plan was prepared

Physical Description of Site and Response Activities

Size of Site: 41 acres Terrain hilly Weather cloudy 40°F

Distance to Nearest: Residence adjacent School 2 miles Hospital 1/6 miles

Public Building 2 miles Other _____

Evacuation: () Yes (✓) No By Whom: _____

Nearest Waterway: stream on site Distance from Site: _____

Norfolk River 1/2 mile west

Condition	Observed	Potential	None	Comments/Observations
Surface Water Contamination		✓		Lead & zinc contamination present in soil, may leach to water
Ground Water Contamination		✓		Lead & zinc contamination present in soil, may leach to water
Drinking Water Contamination		✓		Lead & zinc contamination present in soil, may leach to drinking water
Air Release			✓	
Soil Contamination	✓			Lead & zinc contamination present also Iron & Calcium
Stressed Vegetation			✓	
Dead Animal Species			✓	

Actions Taken On-Site:

Perimeter Monitoring: (✓) Yes () No

Site Entry by TAT: (✓) Yes () No

Tasks Conducted	Level of Protection/Specific PPE Used
Gridded site with 50 ft grid marks	Level D
Screened site using EM-31, magnetometer, and x-met 88D	Level D
Dug core samples and made composites	Level D with surgical gloves, nitril gloves and Tyvek.
collected water samples	Level D

Air Monitoring Summary Log

Date: 4/1/92

Page 1 of 3

Data Collected by: Killian / Coffey

Data to be summarized by a "Range of readings, i.e., - Low to High" and/or "Average" by location.

Station/Location	Mini ram CGI/O₂ Meter	Radiation Meter	PID/Probe	FID/OVA *	Detector Tube
Background	00			0-1 units	
002	00				
004	00				
006	00				
008	00				
009 PFK 010	00				
011 010 PFK	00				
012	00				
013	00				

Summary/Comments:

* The site was screened with the OVA, no readings above the background levels were recorded.

Air Monitoring Summary Log

Date: 4/11/92

Page 2 of 3

Data Collected by: Killian / coffee

Data to be summarized by a "Range of readings, i.e., - Low to High" and/or "Average" by location.

Station/Location	EGH/O₂ Meter Mini ram	Radiation Meter	PID/Probe	FID/OVA	Detector Tube
015	00				
016	00				
018	00				
019	00				
020	00				
022	00				
024	00				
026	00				
028	00				

Summary/Comments: _____

Air Monitoring Summary Log

Date: 4/11/92Data Collected by: Killian / coffee

Page 3 of 3

Data to be summarized by a "Range of readings, i.e., - Low to High" and/or "Average" by location.

Station/Location	CGH/O₂ Meter Minimum	Radiation Meter	PID/Probe	FID/OVA	Detector Tube
029	00			0.1 units	
032	00				

Summary/Comments: _____

Hazardous Waste Site and Environmental Sampling Activities

Off Site: (✓) Yes () No
On Site: (✓) Yes () No

Describe types of samples and methods used to obtain

samples: Drinking, surface and Break out water samples collected by lowering dedicated 1-L plastic bottle in water then the sample was preserved with HNO₃. Soil samples collected were a composite of sub surface soil. Then placed in appropriate container. Sampling equipment decontaminated with 10% HNO₃ then distilled water.

Was Laboratory notified of Potential Hazard Level Of Samples? (✓) Yes () No

Note: The nature of the work assignment may require the use of the following procedures/programs which will be included as Attachments to this HASP as applicable: Emergency Response Plan, Confined Space Entry Procedures, Spill Containment Program.

Disclaimer: This Health and Safety Plan (HASP) was prepared for work to be conducted under the Technical Assistance Team (TAT) Contract 68-WO-0036 for Zone I. Use of this HASP by WESTON and its subcontractors is intended to fulfill the OSHA requirements found in 29 CFR 1910.120. Items not specifically covered in this HASP are included by reference to 29 CFR 1910 and 1926.

The signatures below indicate that the individuals have read and understood this Health and Safety Plan.

PRINTED NAME	SIGNATURE	AFFILIATION	DATE
Paul F Killian	<i>Paul F Killian</i>	Roy F Weston - TAT	3/30/92
GEORGE STEVENS JR.	<i>George Stevens Jr.</i>	TAT	3/30/92
TIMOTHY JONES	<i>Timothy Jones</i>	WESTON TAT	3/30/92
ED COFFEY	<i>Ed Coffey</i>	WESTON TAT	03/30/92

Final Submission of HASP by:		Date
Post Response Review by:		
Post Response Approval by:		
TAT HSO Review by:		

COMMENTS/FOLLOWUP

original maps can be found in TDD 01-9201-01.

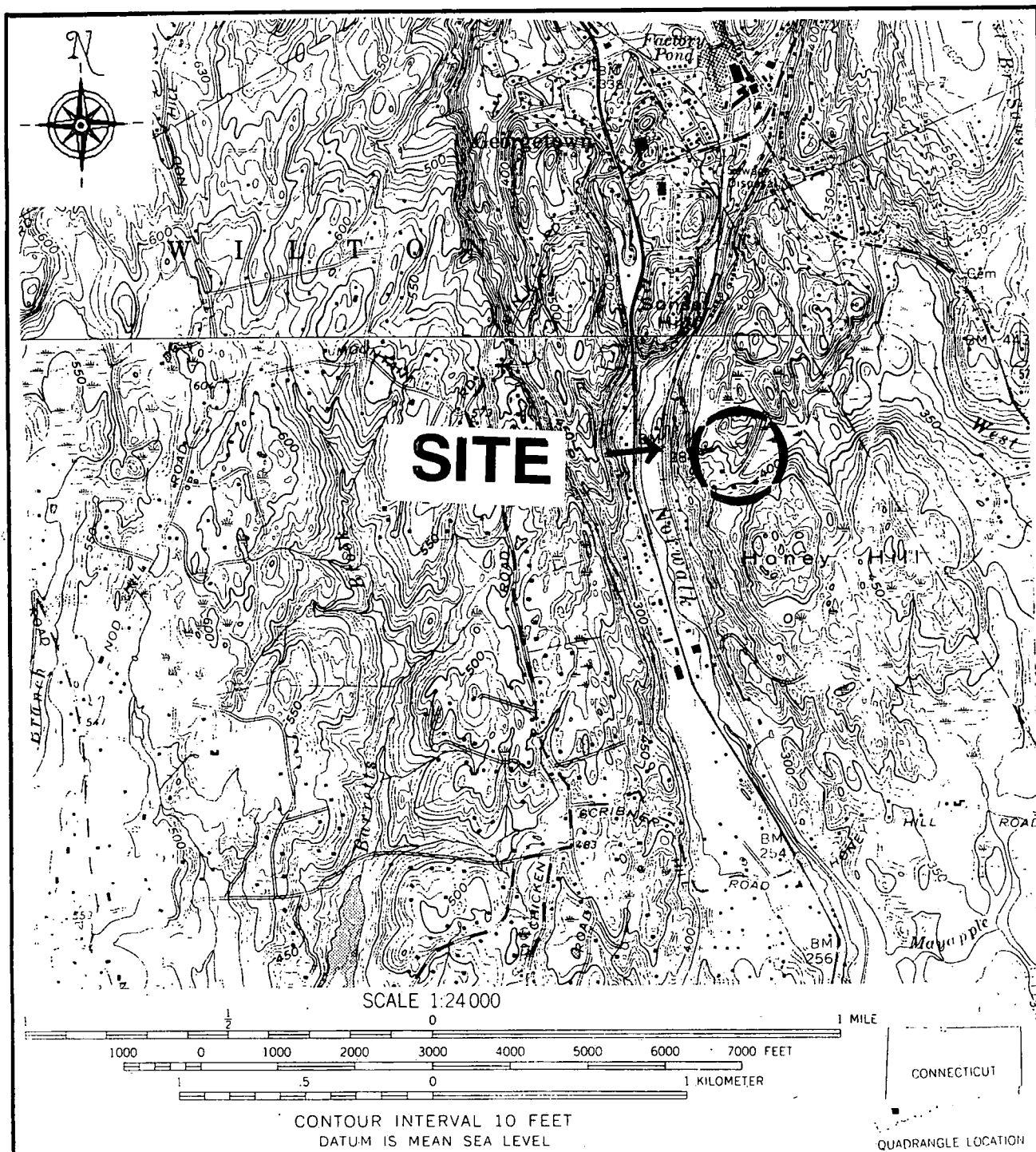


FIGURE 1 **Site Location Map** **HARCO PROPERTY** **Wilton, Connecticut**

Take Rt.95S to Rt.90 (Mass Pike). Follow Rt.90W to Rt.84S.
 Take Rt.84S to Rt.7 (Danbury, CT.). Follow Rt.7S into Wilton, CT.
 Exit Rt.7 at Honey Hill Rd, then take first left onto Mather Street
 Mather Street turns into Old Mill Road. Site is on your left.

WESTON

REGION I TECHNICAL ASSISTANCE TEAM

DRAWN
 Paul F. Killian

DATE
 01/92

PCS #
 1638

APPROVED

DATE
 1/92

TDD #
 01-9201-01

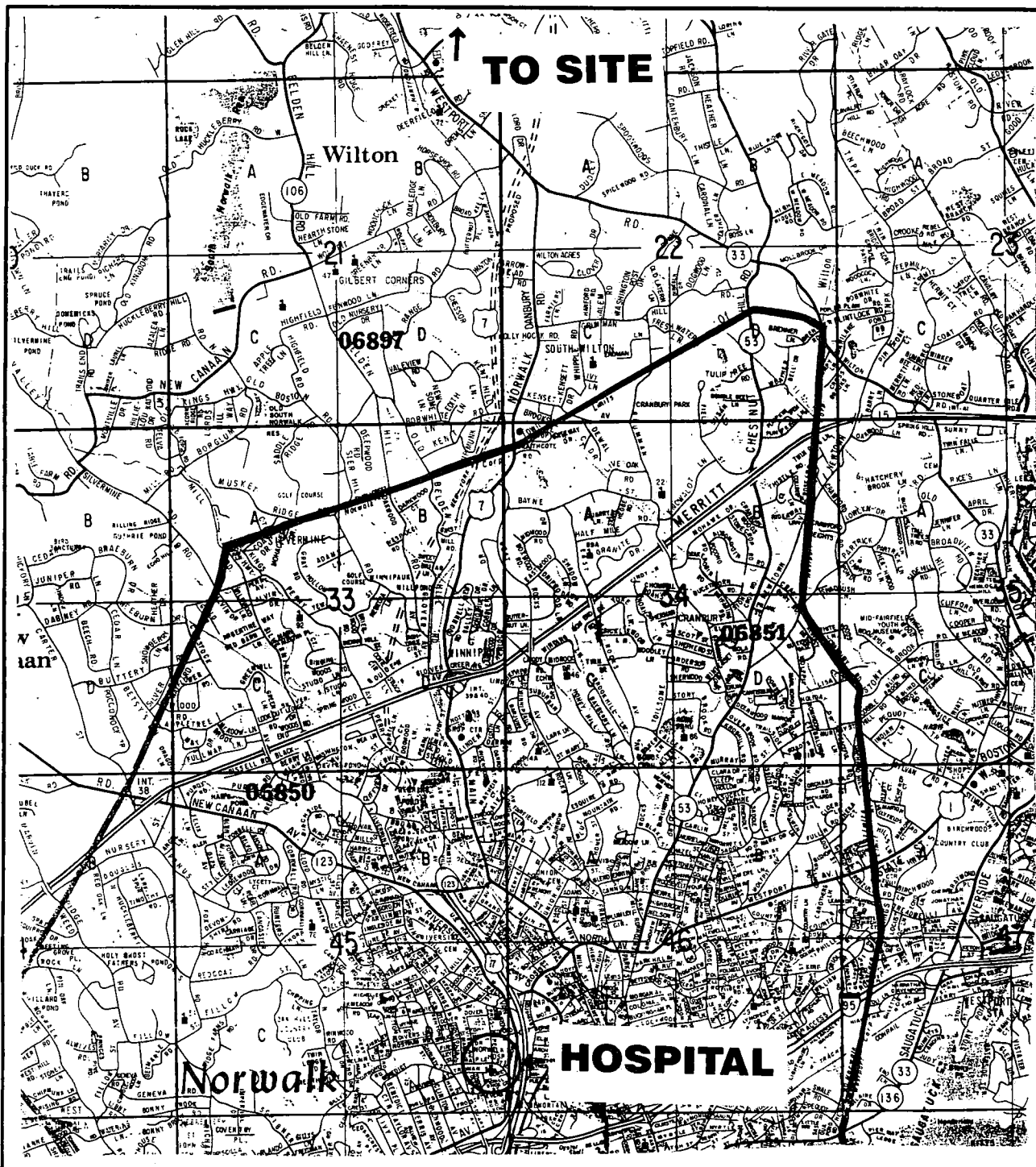


FIGURE 2

**Directions To Norwalk Hospital
HARCO PROPERTY
Wilton, Connecticut**

From Site: Take Rt. 75 into Norwalk, CT.
Take Right onto Canaan Ave, then left onto Riverside Ave.
Riverside Ave then turns into Van Buren Ave. Take left onto Maple St.
Hospital is on your left. (Telephone Number (203) 852-2000)

WESTON

REGION I TECHNICAL ASSISTANCE TEAM

DRAWN
Paul F. Killian

DATE
01/92

PCS #
1638

APPROVED

W

DATE

1/92

TDD #

01-9201-01

APPENDIX C

SITE SIGN-IN SHEET

SITE ENTRY AND EXIT LOG

Tuesday:

Work Site

Date 3/31/92

TIME		PERSONNEL	REPRESENTING	TIME		EQUIPMENT
In	Out			In	Out	
0730	1700	Paul F Kihlman	Roy F Weston - TAT			
0730	1700	Tim Jones	Weston - TAT			
0730	1700	Ed Coffee	Weston - TAT			
0730	1200	George Stevens	Weston - TAT			
0730	1700	Paul Groux	US EPA			
1020	1200	Alyson Eisenbach	Town of Wilton			
1020	1200	William Wiley	Town of Wilton			
1030	1400	T R Boffi	DEP. SRCD			
1030	1400	Michael M. Daniel	DEP/SRCD			
1030	1400	Melissa Blais	DEP/SRCD			
1159	1500	ROYAL J. NADEAU	US EPA ERT			
1159	1500	Gayle Buckham	Weston - REAC			
1230	1200	Robert Stargel	Owner			
1230	1600	Thomas Hing	Owner/Developer			

Comments

D

APPENDIX D

XMET XRF RESULTS

X-MET - TB1

HARCO PROPERTY

March 31, 1992 Site Visit

X-MET XRF Results

Sample Location	Analyte	Readings			
		1st Reading	2nd Reading	3rd Reading	Average
0 (Background)	Lead	0	9.8	0	0
	Zinc	2346	2220	2561	2400 (2375)
0 + 50, N50	Lead	0	0	0	0
	Zinc	761	1085	979	950 (942)
0 + 50 brown, gravel, micaceous	Lead	0	0	0	0
	Zinc	450	405	349	400 (401)
0 + 50, S50 silty dark soil	Lead	124	204	102	125 (143)
	Zinc	0	262	0	100 (87)
ES1 tan sandy gravel	Lead	178	282	124	190 (195)
	Zinc	25	106	113	75 (81)
1 + 00; S50 silty dark soil	Lead	0	0	0	0
	Zinc	643	557	519	550 (573)
1 + 00 sandy gravel	Lead	432	525	619	535 (549)
	Zinc	1616	2016	1803	1800 (1812)
1 + 00; 50 N dark silty	Lead	0	0	0	0
	Zinc	209	181	169	180 (186)
1 + 00; 100 N dark silty for soil	Lead	0	0	0	0
	Zinc	697	551	675	625 (641)
1 + 50; 100 N clay - gravel mix (tan)	Lead	0	0	0	0
	Zinc	482	559	523	510 (521)
1 + 75; 105 N red-brown soil	Lead	1726	1750	1789	1750 (1755)
	Zinc	>1%	>1%	>1%	>1%
1 + 50; 50 N tan clay soil	Lead	0	0	0	0
	Zinc	510	451	515	480 (482)

Comments: _____

HARCO PROPERTY
March 31, 1992 Site Visit

X-MET XRF Results

Sample Location	Analyte	Readings			
		1st Reading	2nd Reading	3rd Reading	Average
1+50; 00 gravel (access rd)	Lead	0	0	0	0
	Zinc	7.8	0	6	0
1+50; 25 S dark + tan, sandy	Lead	0	0	0	0
	Zinc	1735	1814	1811	1780 (1789)
2+00; 25 S tan, wet	Lead	0	0	0	0
	Zinc	615	587	499	550 (567)
2+00 access rd	Lead	0	0	0	0
	Zinc	560	615	592	580 (589)
2+00 40 N brown, sandy rock	Lead	0	0	0	0
	Zinc	1086	1918	3210	2000 (2071)
2+00; 100 N Red	Lead	945	751	829	800 (842)
	Zinc	2244	676	1618	1500 (1513)
2+00; 150 N Red, brown	Lead	1194	1481	1270	1300 (1315)
	Zinc	>1%	>1%	>1%	>1%
2+50; 50 S brown, gravel	Lead	0	0	0	0
	Zinc	584	550	574	575 (569)
2+50; 15 S red brown	Lead	589	605	775	640 (656)
	Zinc	5849	5400	5341	5400 (5530)
2+50; 00 gravel access rd	Lead	38	38	100	50 (59)
	Zinc	0	0	0	0
2+50; 50 N dark marshy	Lead	0	0	0	0
	Zinc	0	0	0	0
3+00; 125 S dark for soil	Lead	0	0	0	0
	Zinc	0	0	0	0

Comments: _____

HARCO PROPERTY
March 31, 1992 Site Visit

X-MET XRF Results

Sample Location	Analyte	Readings			
		1st Reading	2nd Reading	3rd Reading	Average
3+00; 100 S dark topsoil	Lead	0	0	0	0
	Zinc	0	0	0	0
3+00; 50 S brown, black fill	Lead	346	263	261	275 (290)
	Zinc	1807	1229	1038	1300 (1358)
3+00; 00 tan fill	Lead	831	905	1074	900 (957)
	Zinc	383	1326	2125	1300 (1278)
3+00; 50 N Red-brown	Lead	5715	2161	2037	3000 (3304)
	Zinc	>1%	>1%	>1%	>1%
3+00; 90 N dark topsoil	Lead	0	0	0	0
	Zinc	0	0	0	0
3+50; 155 N organic debris	Lead	0	0	0	0
	Zinc	0	0	0	0
3+50; 100 N dark, gray soil	Lead	0	0	0	0
	Zinc	0	0	0	0
3+50; 50 N dark, red water runoff	Lead	0	0	0	0
	Zinc	0	0	0	0
3+50; 00 dark black fill	Lead	0	0	0	0
	Zinc	0	0	0	0
3+50; 50 S dark fill	Lead	422	475	516	475 (471)
	Zinc	1791	2015	1935	1900 (1914)
3+50; 75 S red	Lead	1643	1741	1565	1625 (1650)
	Zinc	>1%	>1%	>1%	>1%
3+50; 100 S brown, sandy	Lead	615	549	648	600 (604)
	Zinc	3945	3755	4254	3900 (3935)

Comments: 1915
1853 >1%

HARCO PROPERTY
March 31, 1992 Site Visit

X-MET XRF Results

Sample Location	Analyte	Readings			
		1st Reading	2nd Reading	3rd Reading	Average
4+00; 45 S dark, brown, sandy	Lead	443	455	352	425 (418)
	Zinc	193	1810	1471	1600 (1737)
4+00; 00 Brown sandy fill	Lead	0	0	0	0
	Zinc	0	0	0	0
4+00; 50 N brown-tan sandy	Lead	0	0	0	0
	Zinc	436	476	521	475 (478)
4+00; 100 N brown sand fill	Lead	0	0	0	0
	Zinc	250	336	264	275 (283)
4+00; 150 N s.c. of dark soil	Lead	637	543	516	550 (565)
	Zinc	3429	3442	2553	3200 (3141)
4+40; 100 N tan sandy fill	Lead	0	0	0	0
	Zinc	465	454	472	460 (464)
4+40; 50 N Brown fill	Lead	0	0	0	0
	Zinc	1292	1265	1436	1300 (1331)
4+40; 00 dark soil	Lead	897	915	1036	950 (950)
	Zinc	2996	2949	3255	3000 (3067)
4+40; 30 S brown fill	Lead	0	0	0	0
	Zinc	417	401	381	400 (400)
	Lead				
	Zinc				
	Lead				
	Zinc				
	Lead				
	Zinc				

Comments: _____

TABLE 2

HARCO PROPERTY

March 31, 1992 Site Visit

X-MET XRF Results

Sample Location	Analyte	Readings			
		1st Reading	2nd Reading	3rd Reading	Average
2+00 150 N	Lead	1434	1277	1507	1400 (1406)
red	Zinc	9985	8754	744	10,000 (1580)
~ 1+75 75N	Lead	0	0	0	0
Brown	Zinc	767	675	732	730 (725)
~ 2+00 75N	Lead	0	0	0	0
top soil	Zinc	1150	1200	1240	1200 (1197)
~ 2+00 80N	Lead	0	12495	1055	1550 (1575)
Red pilos, brown soil	Zinc	24	710,000	7176	710,000
~ 2+15 110N	Lead	0	0	0	0
Dark black muddy soil	Zinc	0	0	0	0
Reference Point ~ 3+25	Lead	0			
Black soil 150N	Zinc	0			
	Lead				
	Zinc				
	Lead				
	Zinc				
	Lead				
	Zinc				
	Lead				
	Zinc				
	Lead				
	Zinc				

Comments: Operator - Killian

X MET YB2

HARCO PROPERTY

March 31, 1992 Site Visit

X-MET XRF Results

Sample Location	Analyte	Readings			
		1st Reading	2nd Reading	3rd Reading	Average
001 (red soil)	Lead	641	584	467	600 (565)
	Zinc	7124	5120	3990	5200 (5411)
002 (Brown soil)	Lead	54	100	89	80 (81)
	Zinc	1300	760	1160	1000 (1073)
003 (tan mud)	Lead	0	0	0	0
	Zinc	640	611	480	575 (577)
004 (Brown mud)	Lead	0	0	0	0
	Zinc	365	400	390	380 (385)
005 (Brown soil)	Lead	58	161	130	100 (96)
	Zinc	0	0	1200 (?)	0 (400)
006 (tan mud)	Lead	0	0	0	0
	Zinc	630	785	740	700 (718)
007 (Brown mud)	Lead	0	0	0	0
	Zinc	640	622	760	650 (674)
008 (Brown mud)	Lead	0	24	26	15 (17)
	Zinc	0	0	0	0
009 (Brown mud & red streaks)	Lead	552	540	630	570 (574)
	Zinc	3022	3080	2400	2800 (2834)
010 (red mud)	Lead	1330	1300	1280	1300 (1305)
	Zinc	8590	9070	8310	8700 (865)
011 (Brown soil)	Lead	0	0	0	0
	Zinc	370	230	440	350 (347)
012 (Brown mud)	Lead	0	0	0	0
	Zinc	0	0	0	0

Comments: Shot samples thru bag.

HARCO PROPERTY
March 31, 1992 Site Visit

X-MET XRF Results

Sample Location	Analyte	Readings			
		1st Reading	2nd Reading	3rd Reading	Average
0013	Lead	0	0	0	0
Brown soil	Zinc	465	455	433	450
0014	Lead	5,054	4,809	5,302	
red mud	Zinc	>10,000	>10,000	>10,000	
0015	Lead	1,709	1,910	1,791	
brown mud	Zinc	>10,000	>10,000	>10,000	>10,000
0016	Lead	0	0	0	0
dark brown mud	Zinc	0	0	0	0
0017	Lead	67.13	42	10	40
brown soil	Zinc	767.8	550	302	
0018	Lead	1,201	1,527	1,587	
brown mud	Zinc	7,388	8,920	8,714	
0019	Lead	2,557	2,604	2,456	
red mud	Zinc	>10,000	>10,000	>10,000	
0020	Lead	0	0	0	0
dark brown mud	Zinc	0	0	0	0
0021	Lead	1,774	1,782	1,915	
red mud	Zinc	>10,000	>10,000	>10,000	
0022	Lead	1,1681	1,345	1,479	
brown mud	Zinc	>10,000	9,967	>10,000	
0023	Lead	1,514	1,483	772	
dark brown mud	Zinc	1,599	790	0	
0024	Lead	6,099	4,970	5,958	
dark brown soil	Zinc	>10,000	9,358	>10,000	

Comments:

Operator - Shaw
4/8/92

HARCO PROPERTY
March 31, 1992 Site Visit

X-MET XRF Results

Sample Location	Analyte	Readings			
		1st Reading	2nd Reading	3rd Reading	Average
0025 brown soil	Lead	406	260	299	322
	Zinc	2,890	2,244	930	2021
0026 brown soil	Lead	256	247	185	229
	Zinc	3,127	1,995	2,414	2512
0027 brown mud	Lead	920	767	713	800
	Zinc	6,547	4,001	4,918	5155
0028 brown mud	Lead	23	0	0	0
	Zinc	0	0	0	0
0029 brown mud	Lead	3,358	3,381	2,989	3243
	Zinc	>10,000	>10,000	>10,000	>10,000
0030 red mud	Lead	3,756	3,543	3,237	3512
	Zinc	>10,000	>10,000	>10,000	>10,000
0031 red mud	Lead	1,666	1,804	1,997	1822
	Zinc	9,801	>10,000	>10,000	>10,000
0032 dk brown mud	Lead	0	0	443	148
	Zinc	0	0	0	0
0033 red mud	Lead	2,105	2,077	2,372	2185
	Zinc	>10,000	>10,000	>10,000	>10,000
	Lead				
	Zinc				
	Lead				
	Zinc				
	Lead				
	Zinc				

Comments:

Operator - Shaw
4/3/92

E

APPENDIX E

SEFA-P XRF RESULTS

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-028 Cd_109

Energy Range:

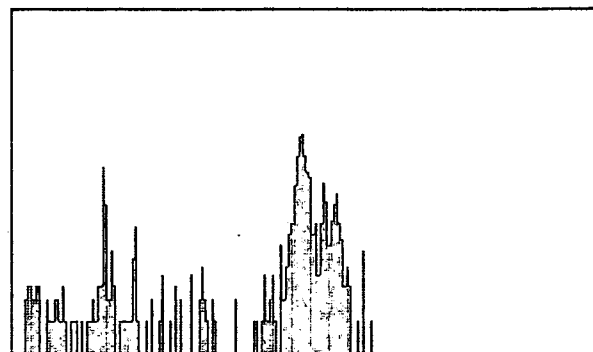
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Real Time 30.00 Sec. Live Time 30.00 Sec.

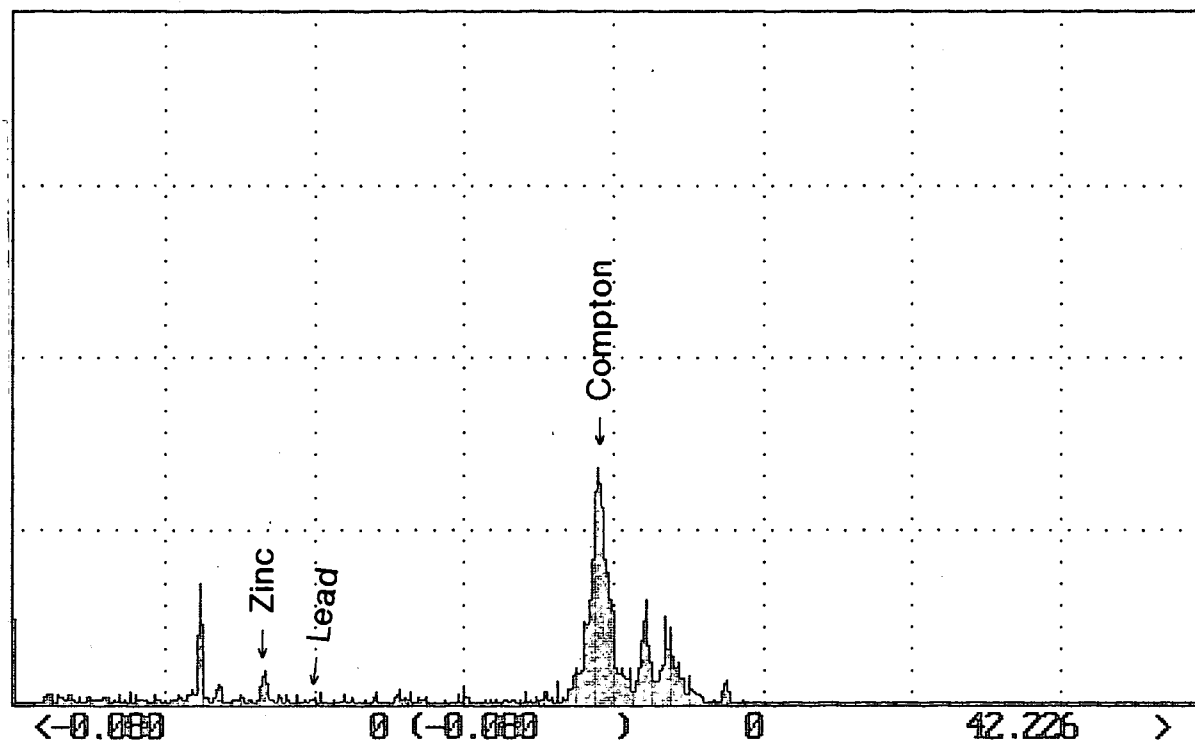
0% Dead Time 0 cps

Cfs 256

H (1)



Station 028



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

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Energy Range:

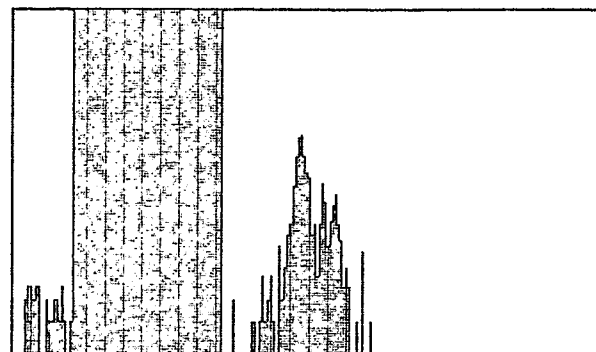
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Real Time 30.00 Sec. Live Time 30.00 Sec.

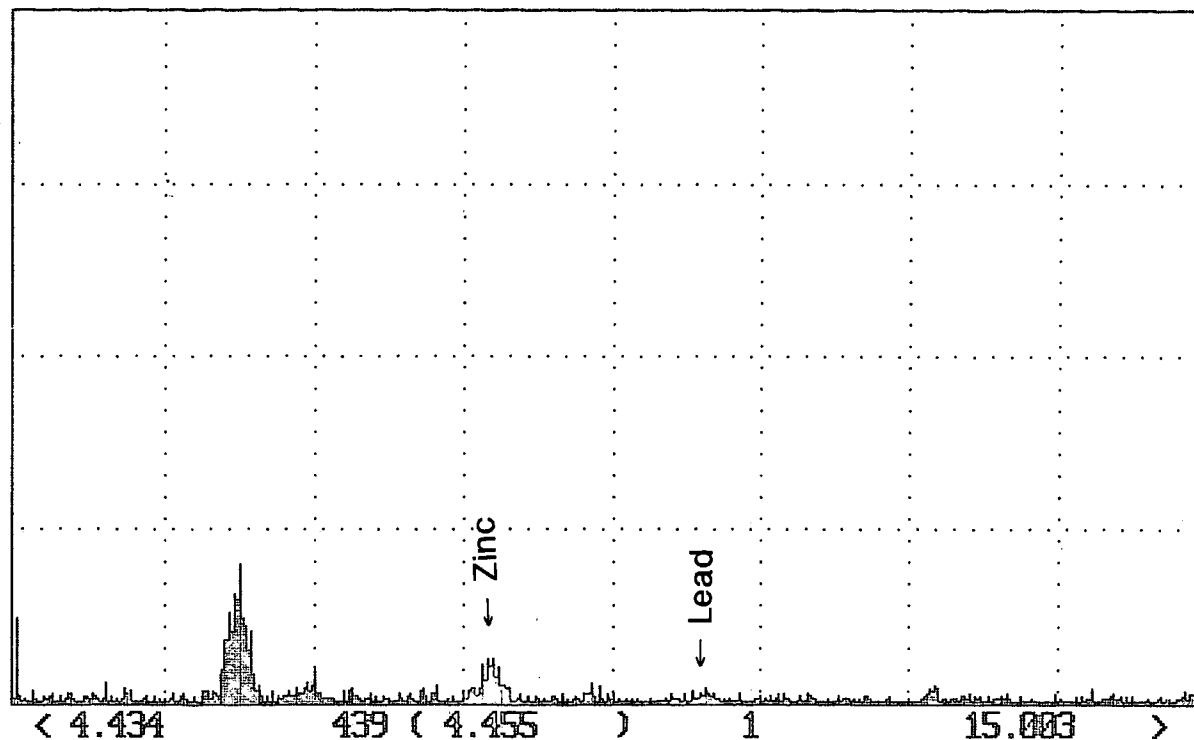
0% Dead Time 0 cps

Cfs 256

H (1)



Station 028



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-029 Cd_109

Energy Range:

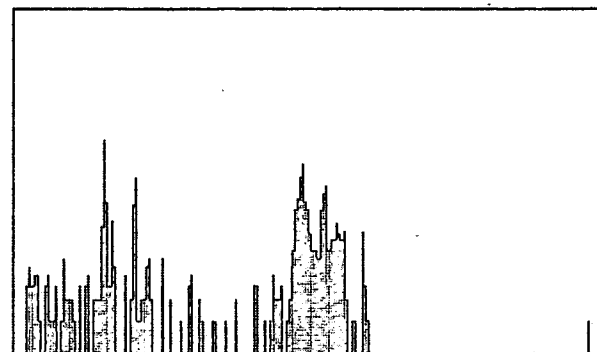
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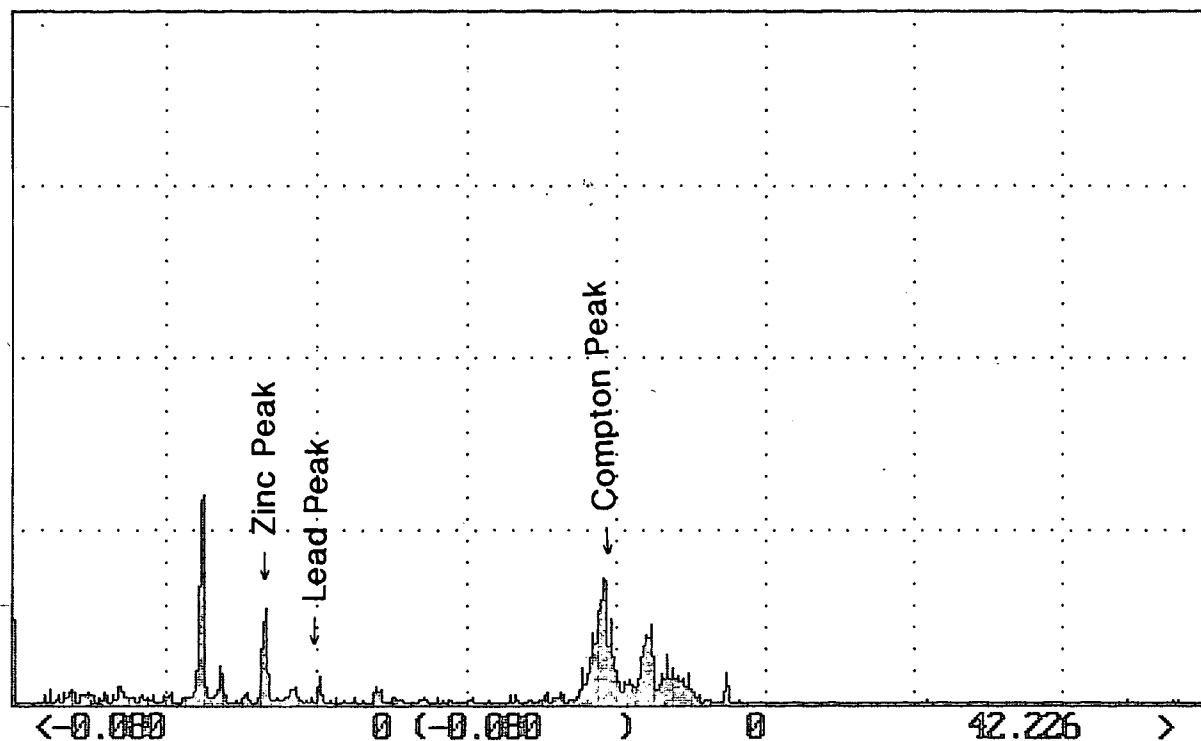
0% Dead Time 0 cps

Cfs 256

H (1)



Station 029



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

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Energy Range:

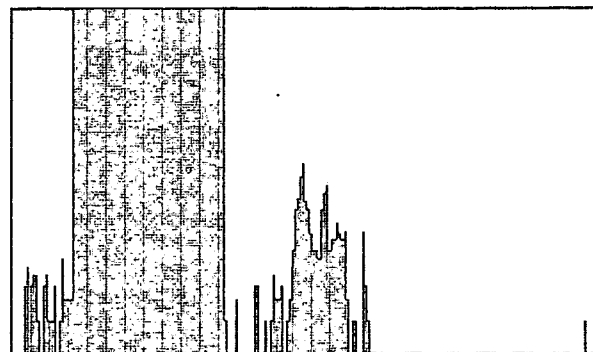
Preset: Live Time 30 sec.

Real Time 30.00 Sec. Live Time 30.00 Sec.

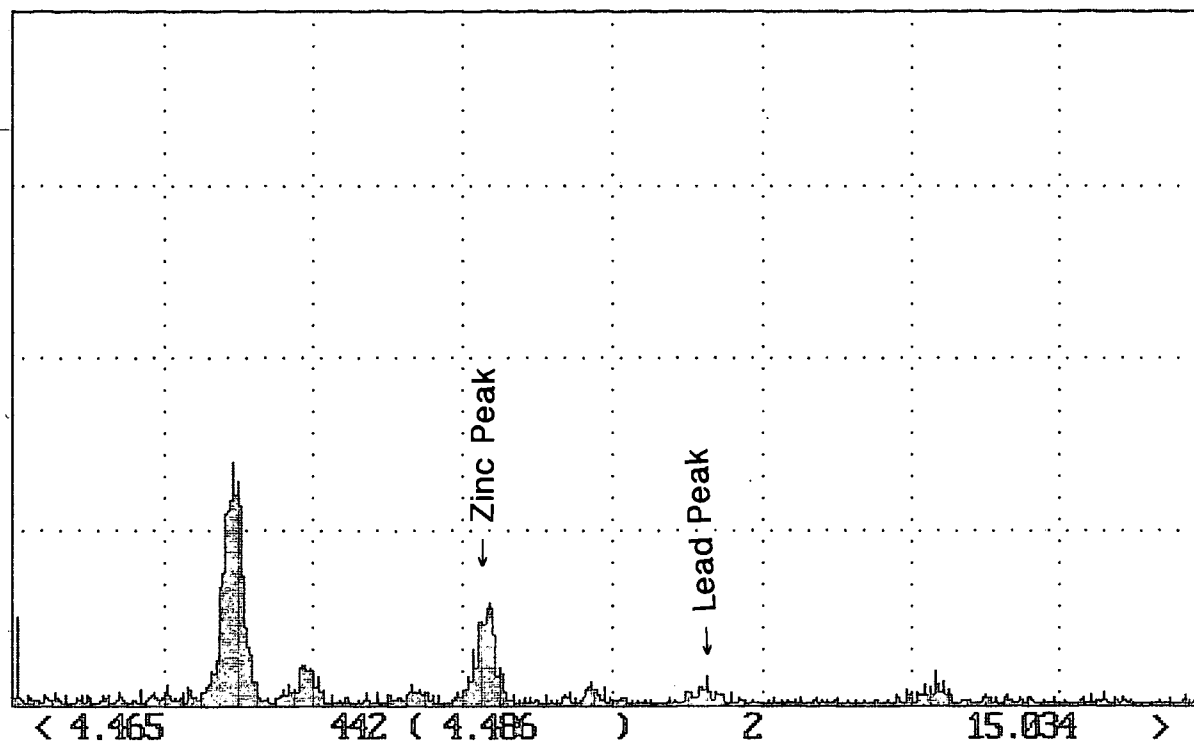
0% Dead Time 0 cps

Cfs 256

H (1)



Station 029



Close-Up

To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-030 Cd_109

Energy Range:

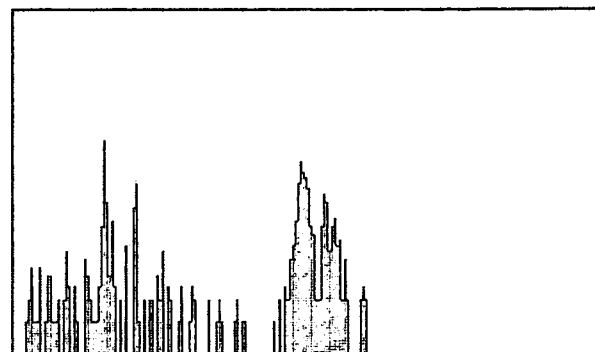
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Real Time 30.00 Sec. Live Time 30.00 Sec.

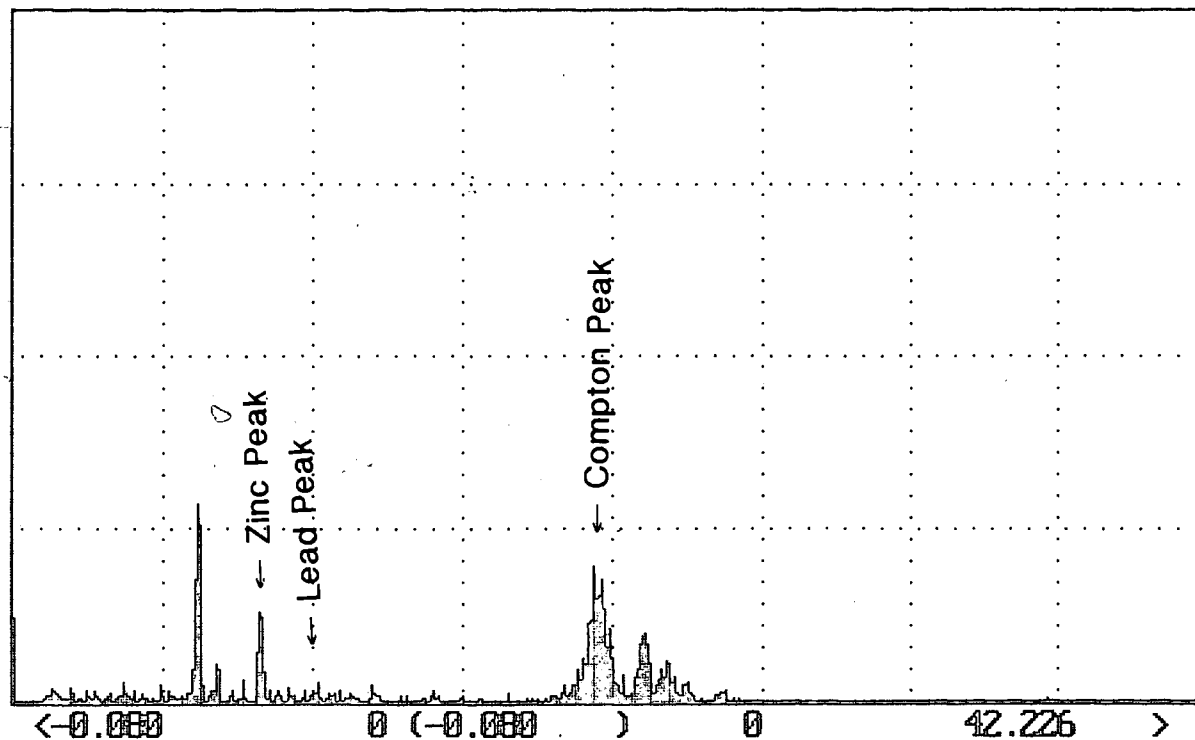
0% Dead Time 0 cps

Cfs 256

H (1)



Station 030



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-030 Cd_109

Energy Range:

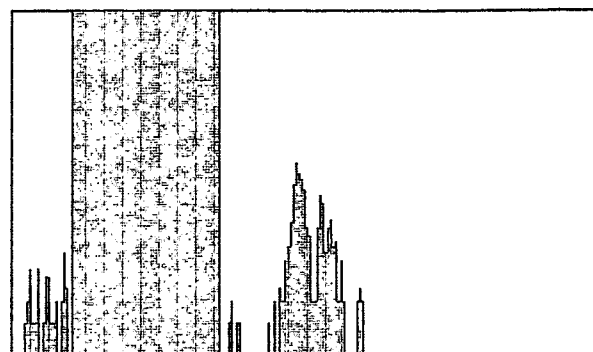
Preset: Live Time 30 sec.

Real Time 30.00 Sec. Live Time 30.00 Sec.

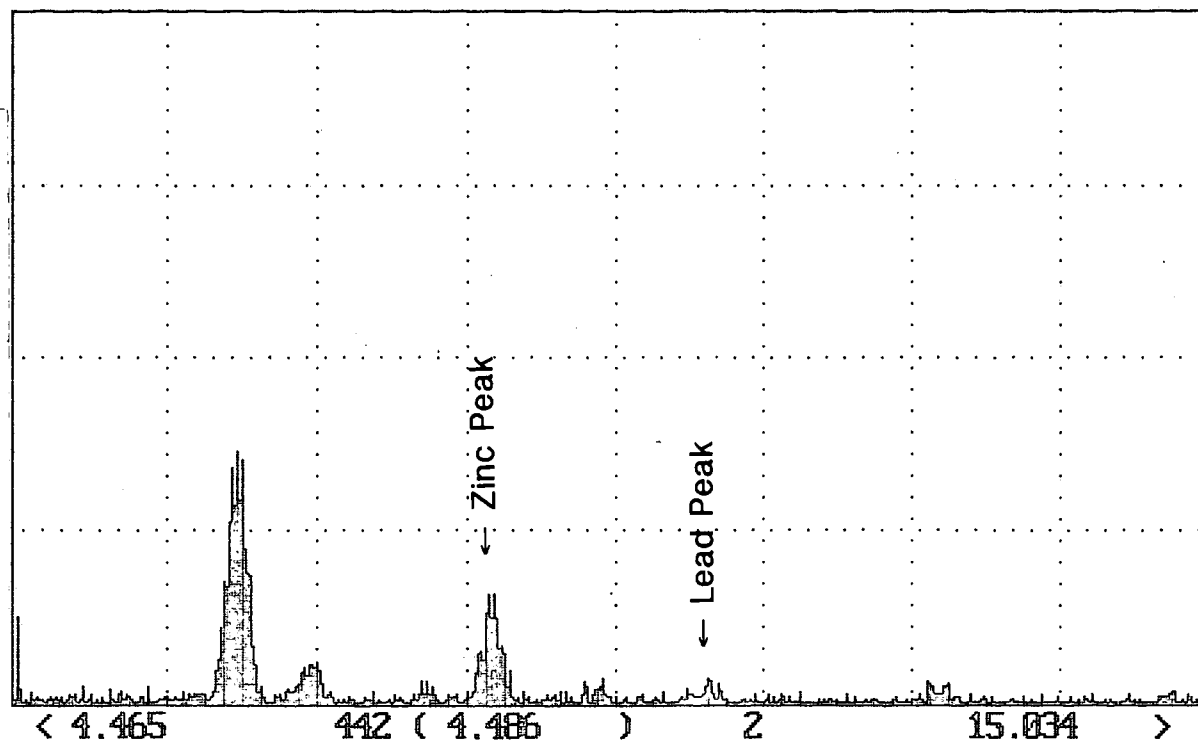
0% Dead Time 0 cps

Cfs 256

H (1)



Station 030



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-031 Cd_109

Energy Range:

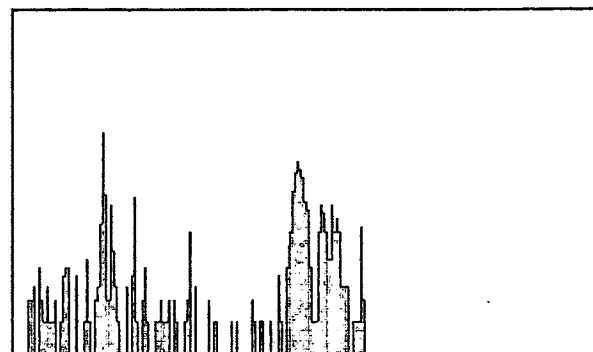
Preset: Live Time 30 sec.

Real Time 30.00 Sec. Live Time 30.00 Sec.

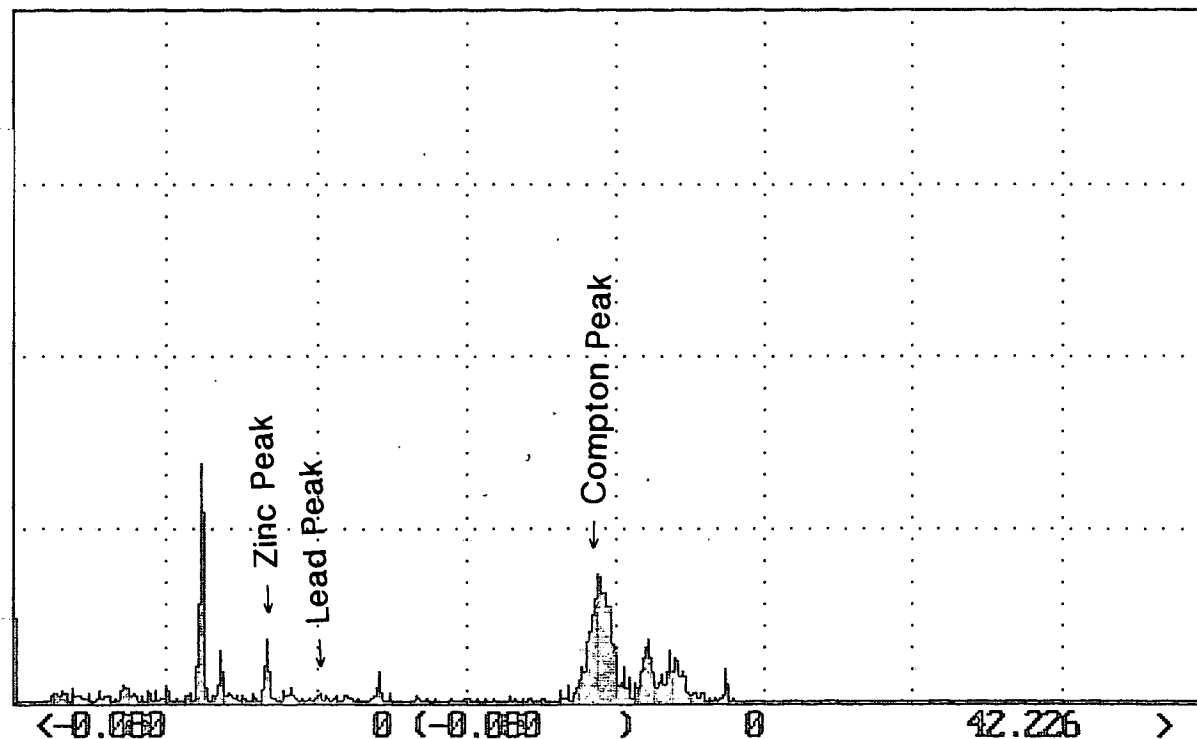
0% Dead Time 0 cps

Cfs 256

H (1)



Station 031



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-031 Ca_109

Energy Range:

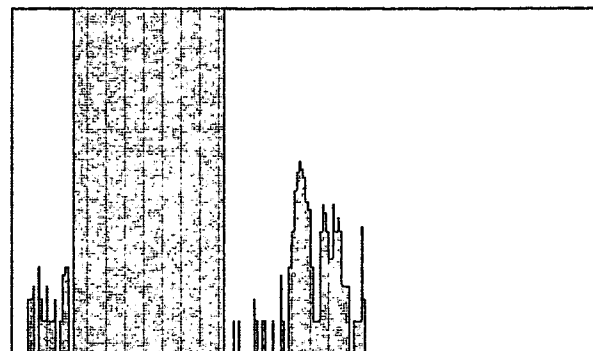
Preset: Live Time 30 sec.

Real Time 30.00 Sec. Live Time 30.00 Sec.

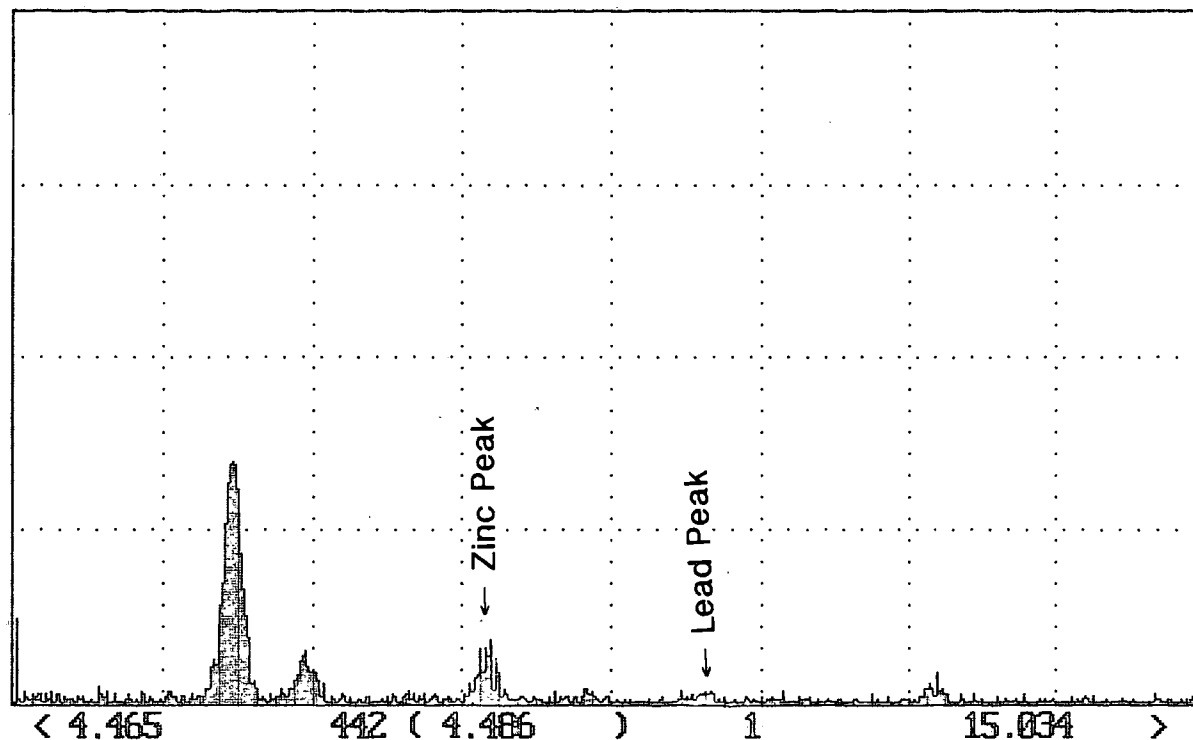
0% Dead Time 0 cps

Cfs 256

H (1)



Station 031



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-032 Cd_109

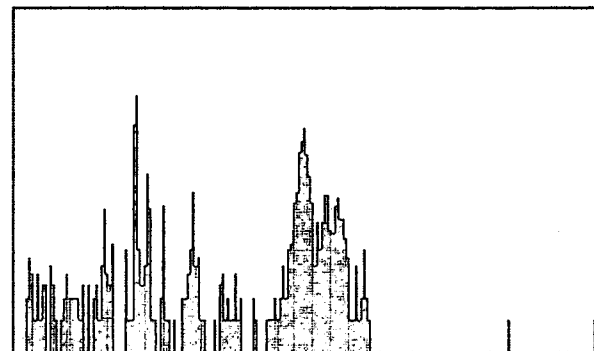
Energy Range:

Preset: Live Time 30 sec.

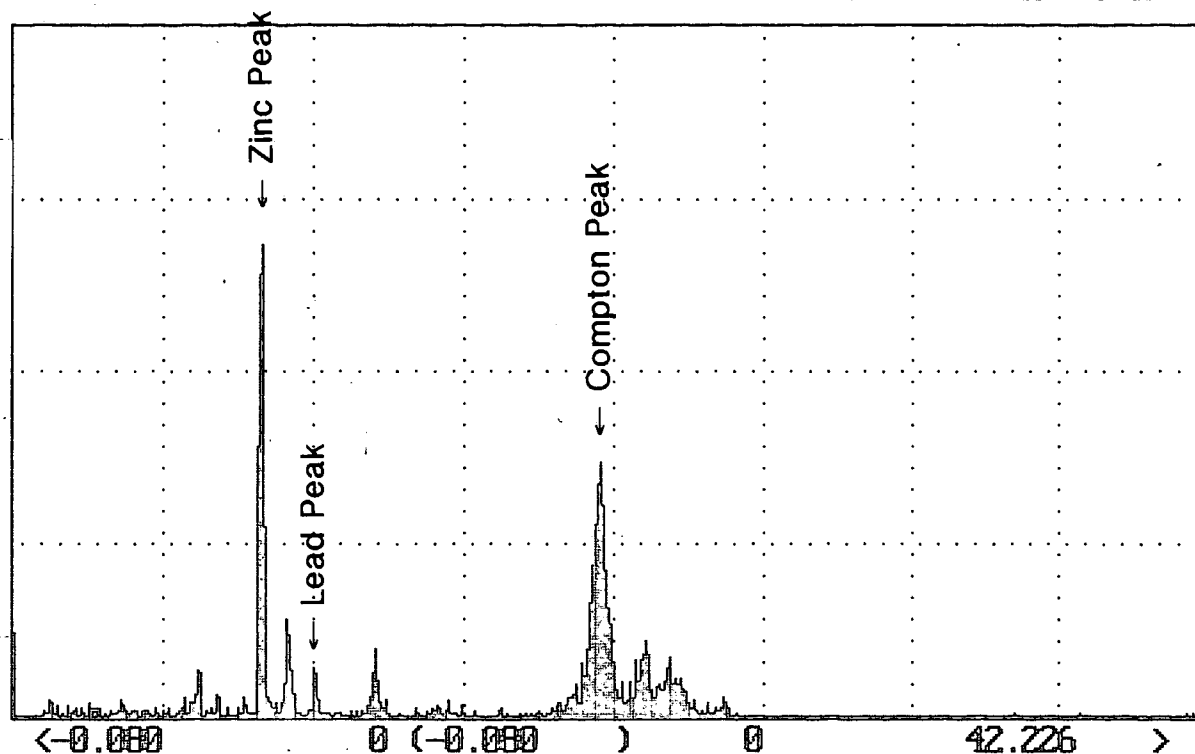
Real Time 31.00 Sec. Live Time 30.00 Sec.

3% Dead Time 0 cps

Cfs 256 H (1)



Station 032



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-032 Cd_109

Energy Range:

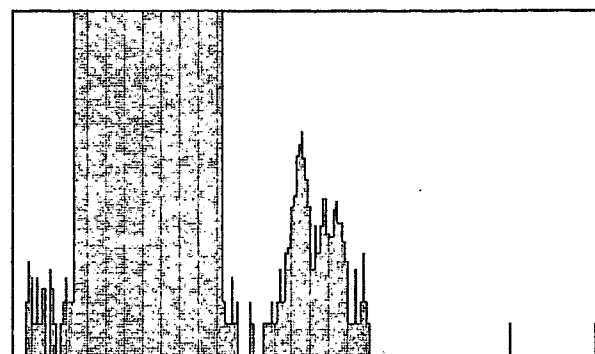
Preset: Live Time 30 sec.

Real Time 31.00 Sec. Live Time 30.00 Sec.

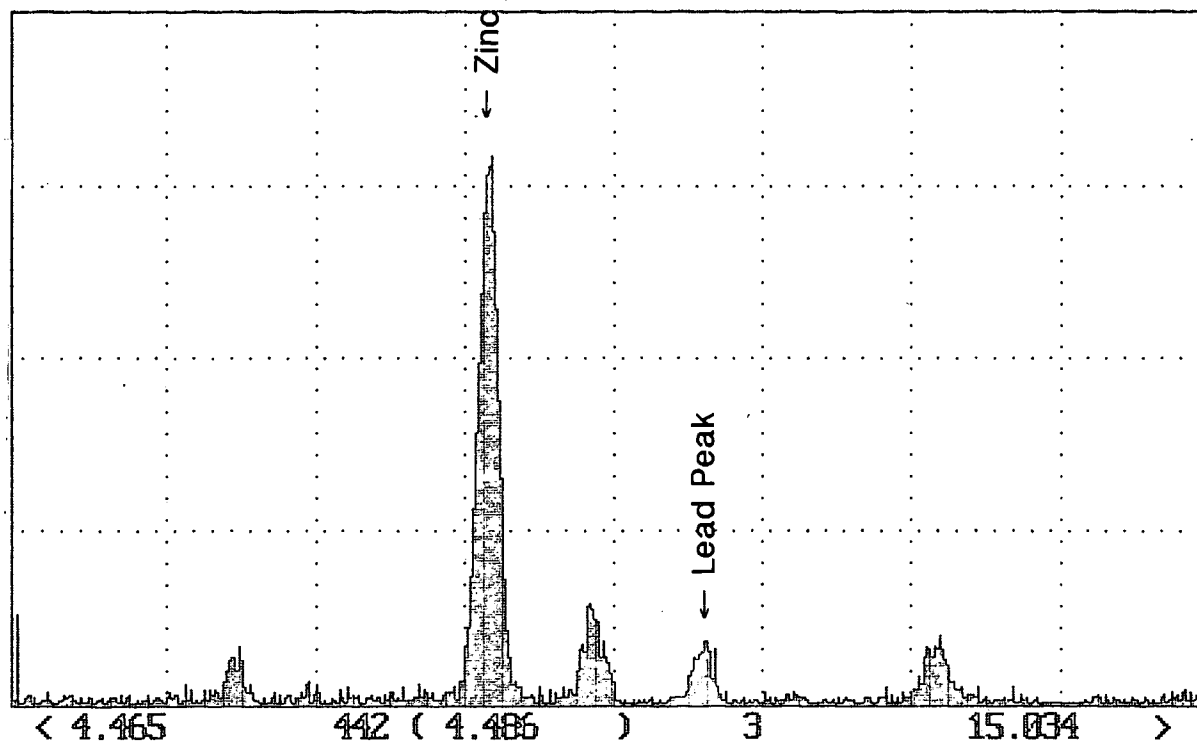
3% Dead Time 0 cps

Cfs 256

H (1)



Station 032



Close-Up

To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-033 Cd_109

Energy Range:

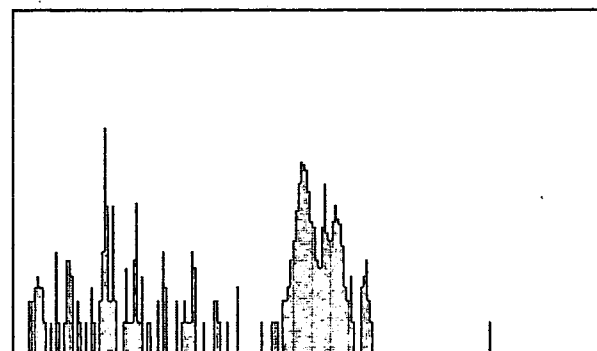
Preset: Live Time 30 sec.

Real Time 30.00 Sec. Live Time 30.00 Sec.

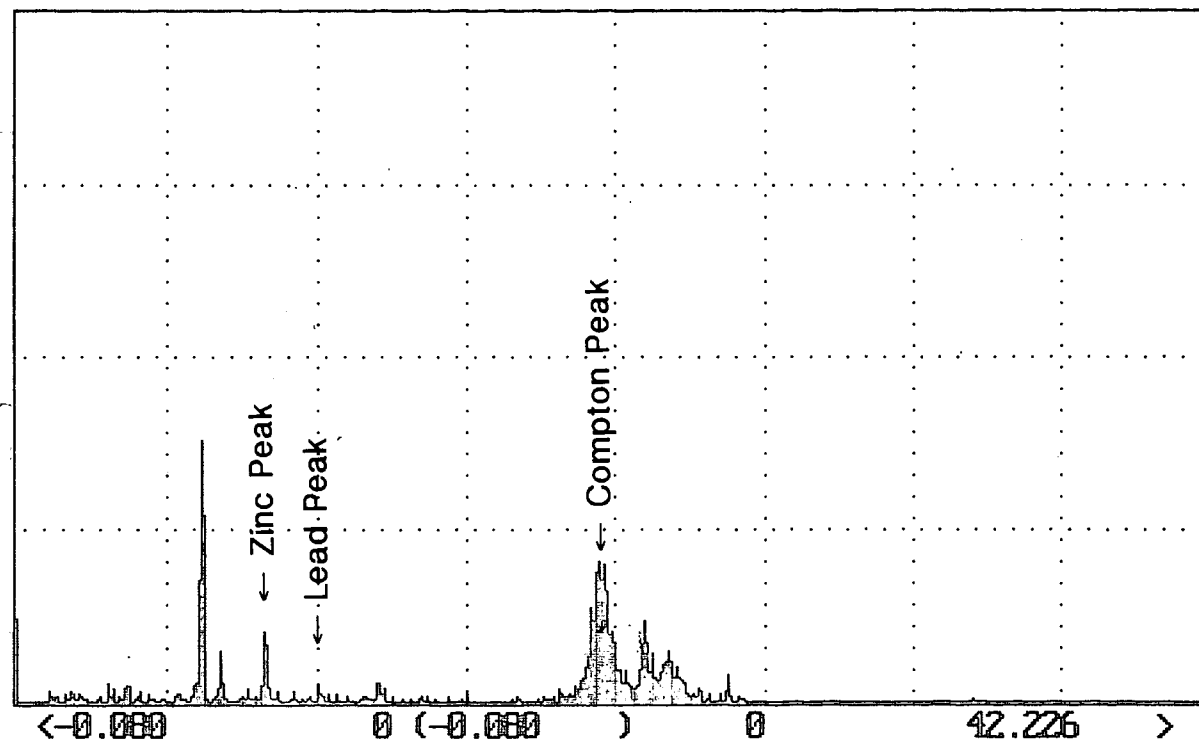
0% Dead Time 0 cps

Cfs 256

H (1)



Station 033



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: STA-033 Cd_109

Energy Range:

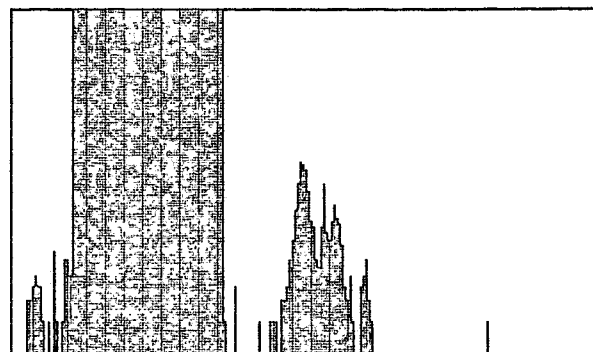
Preset: Live Time 30 sec.

Real Time 30.00 Sec. Live Time 30.00 Sec.

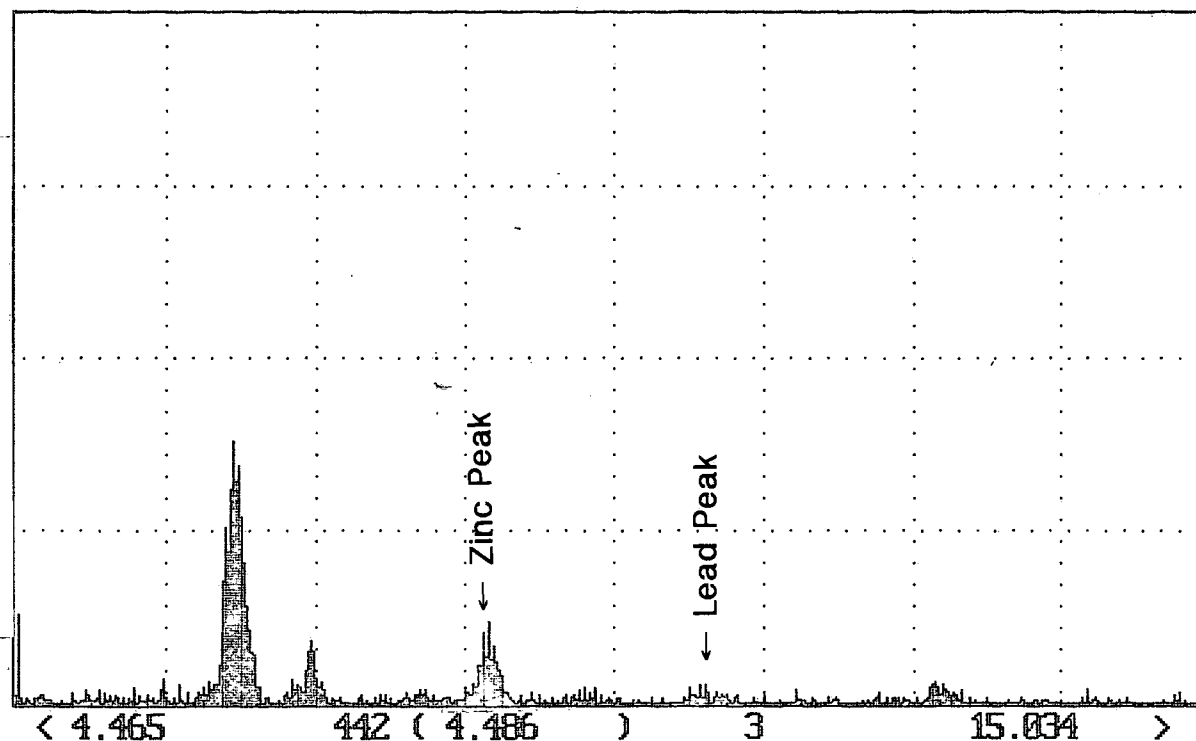
0% Dead Time 0 cps

Cfs 256

H (1)



Station 033



Close-Up

To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: Pb-Pure Cd_109

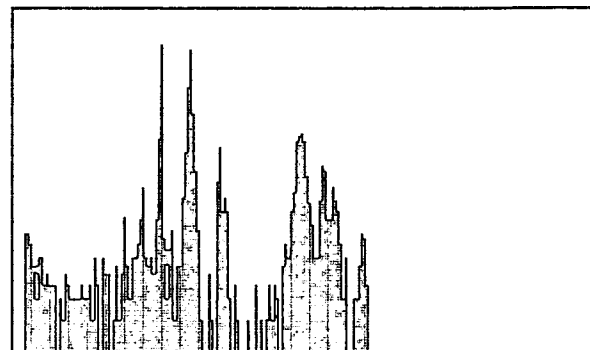
Energy Range:

Preset: Live Time 60 sec.

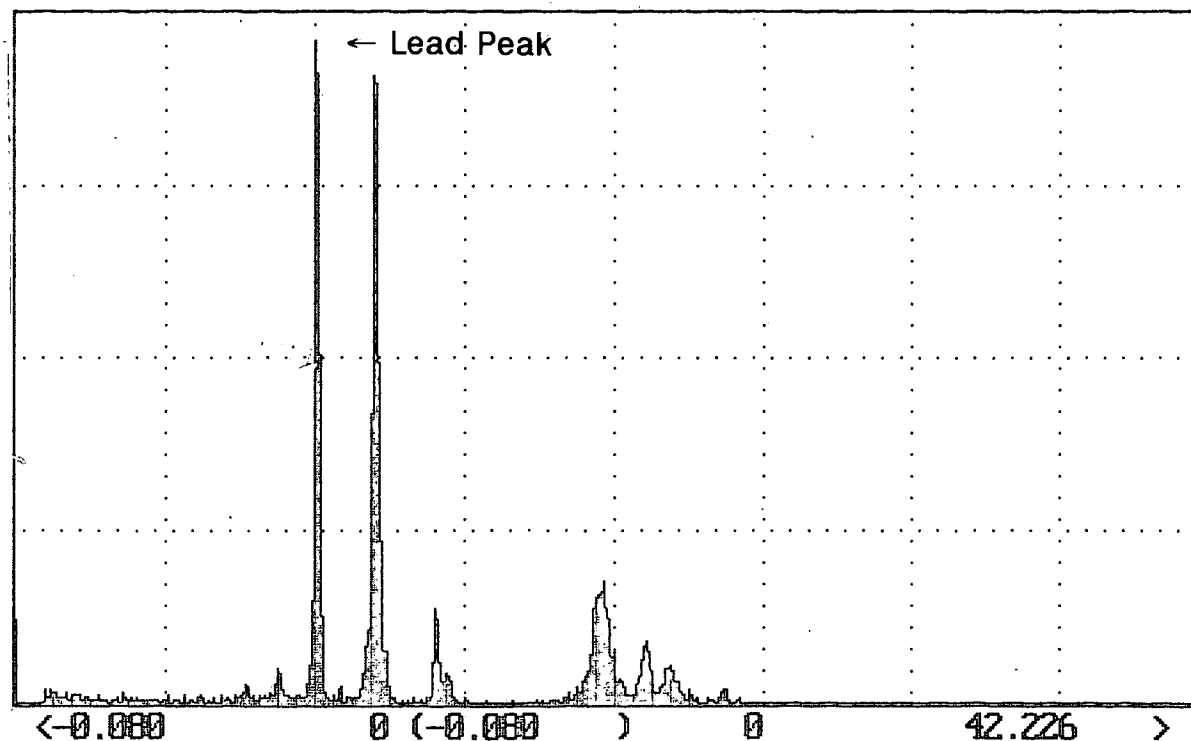
Real Time 62.00 Sec. Live Time 60.00 Sec.

3% Dead Time 0 cps

Cfs 512 H (1)



Pure Lead Source



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: Zn-Pure Cd_109

Energy Range:

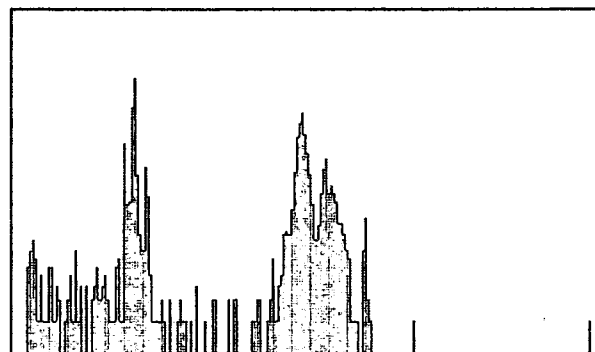
Preset: Live Time 60 sec.

Real Time 61.00 Sec. Live Time 60.00 Sec.

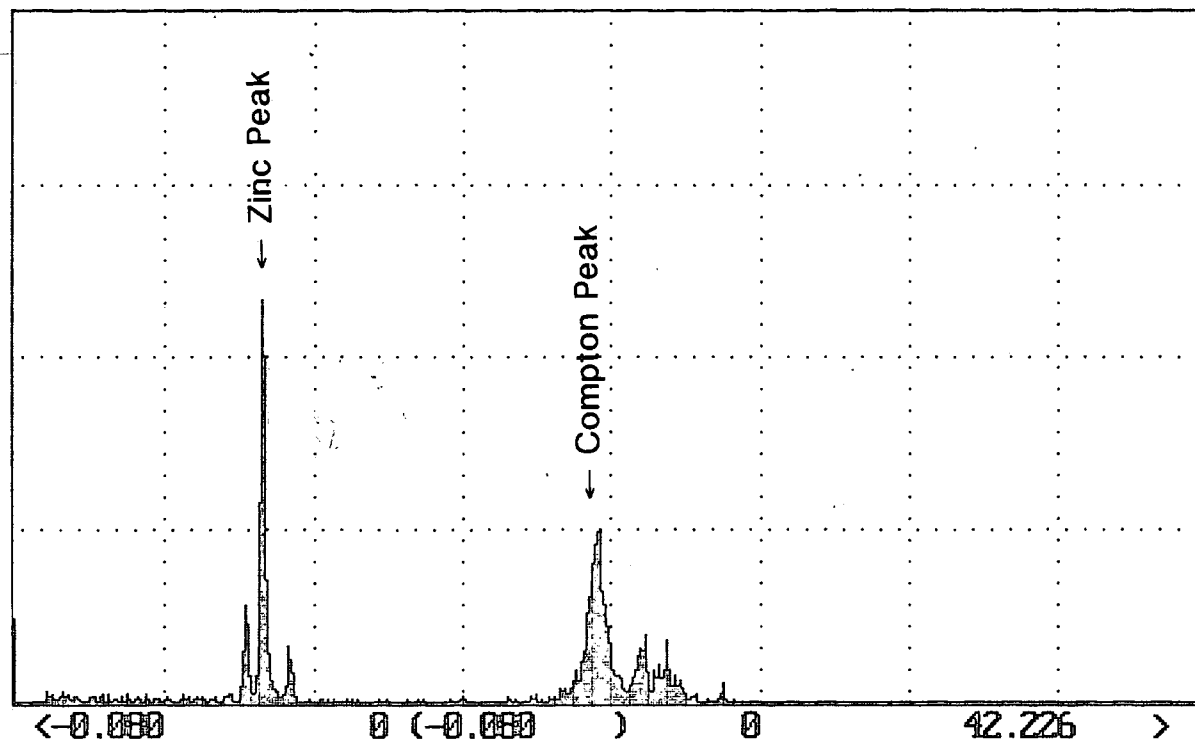
1% Dead Time 0 cps

Cfs 512

H (1)



Pure Zinc Source



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: 01663 Cd_109

Energy Range:

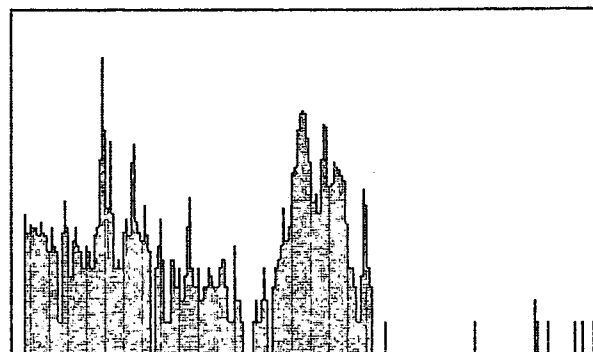
Preset: Live Time 120 sec.

Real Time 122.00 Sec. Live Time 120.00 Sec.

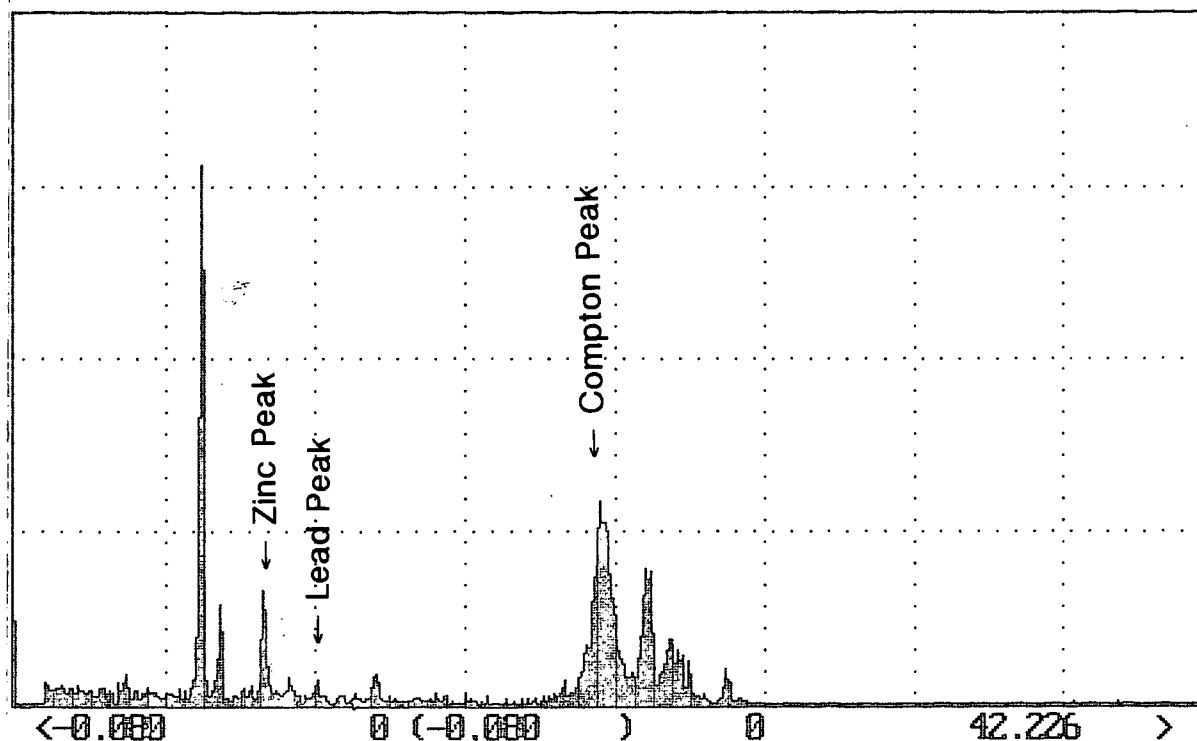
1% Dead Time 0 cps

Cfs 512

H (1)



Calibration Standard 01663



Full Scale

To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: 01663 Cd_109

Energy Range:

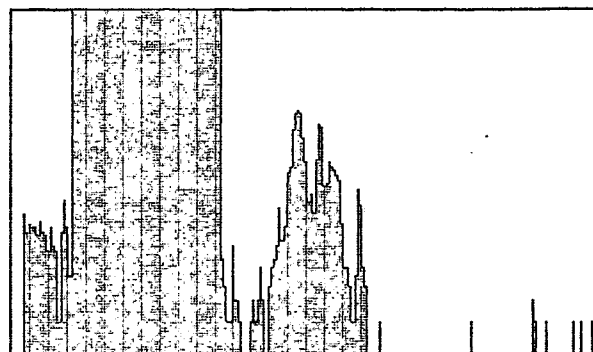
Preset: Live Time 120 sec.

Real Time 122.00 Sec. Live Time 120.00 Sec.

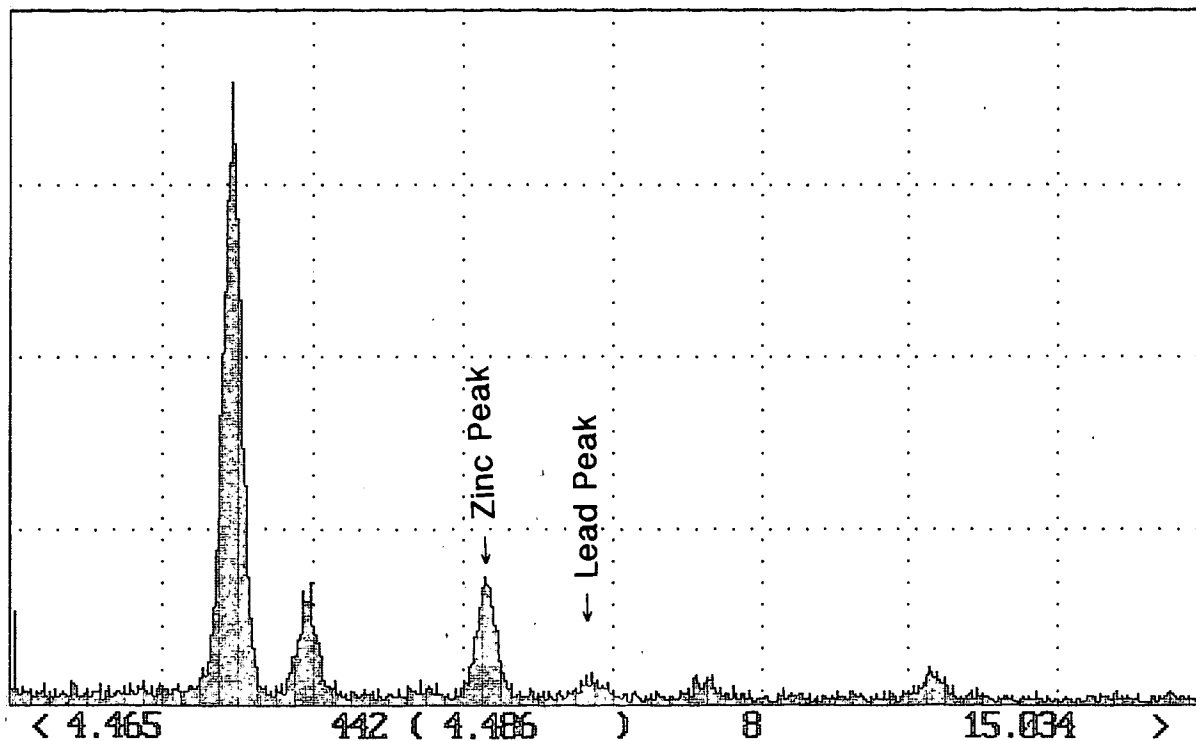
1% Dead Time 0 cps

Cfs 512

H (1)



Calibration Standard 01663



Close-Up

To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEPA/PC (c) V4.00

ID: 01664 Cd_109

Energy Range:

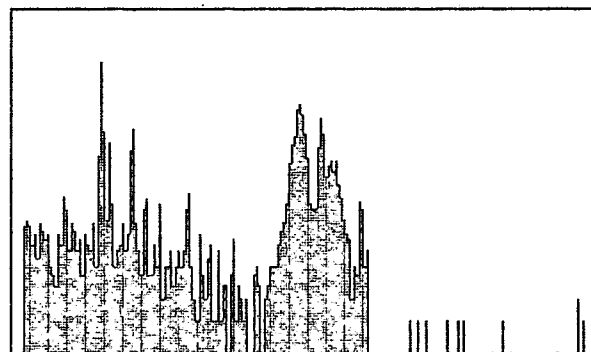
Preset: Live Time 120 sec.

Real Time 122.00 Sec. Live Time 120.00 Sec.

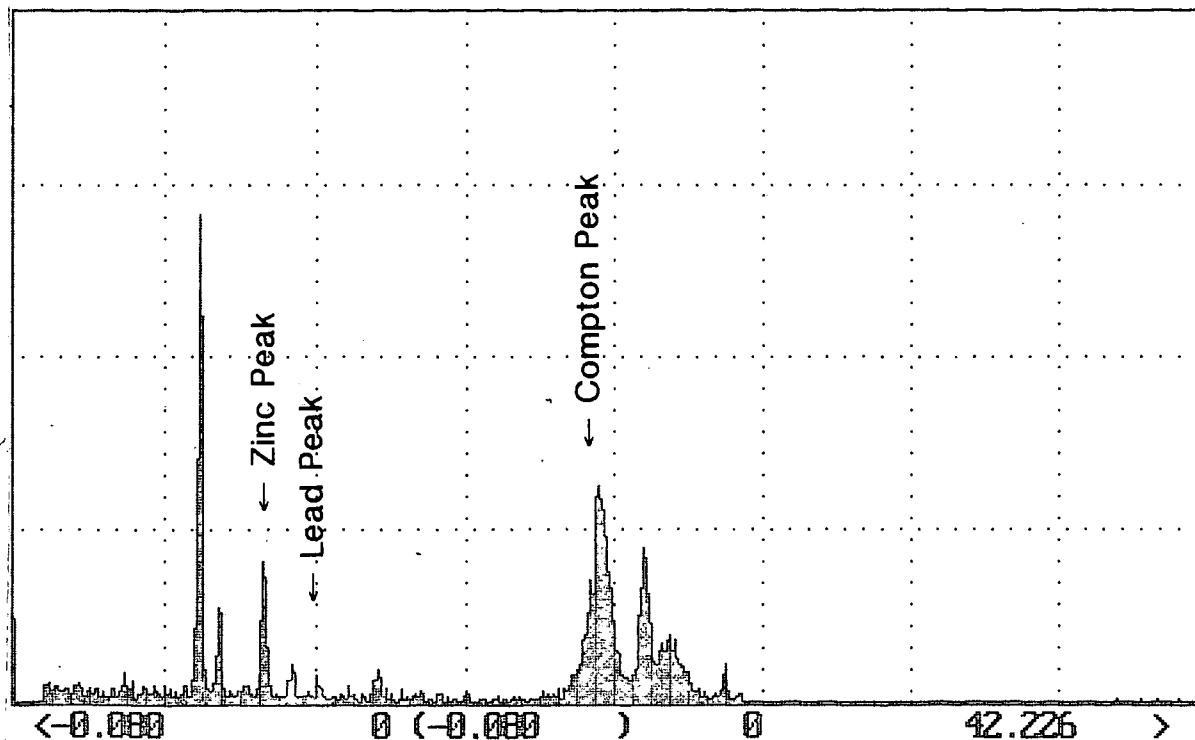
1% Dead Time 0 cps

Cfs 512

H (1)



Calibration Standard 01664



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: 01664 Cd_109

Energy Range:

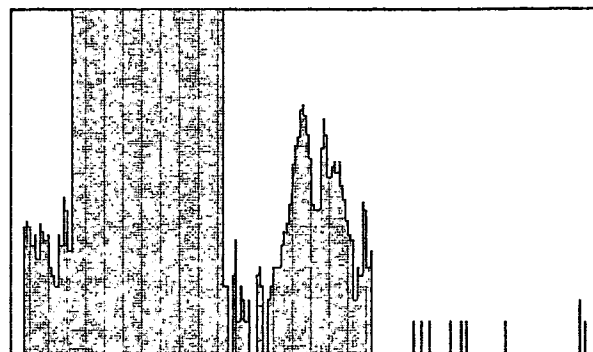
Preset: Live Time 120 sec.

Real Time 122.00 Sec. Live Time 120.00 Sec.

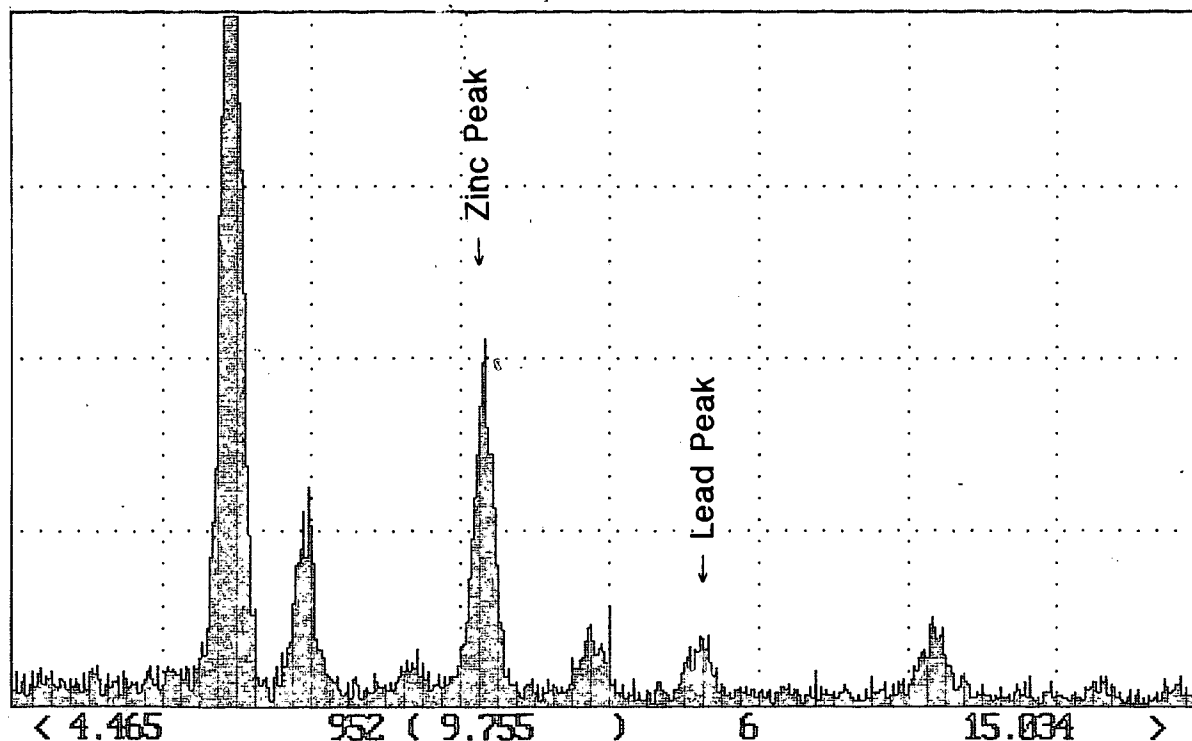
1% Dead Time 0 cps

Cfs 256

H (1)



Calibration Standard 01664



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: 01665 Cd_109

Energy Range:

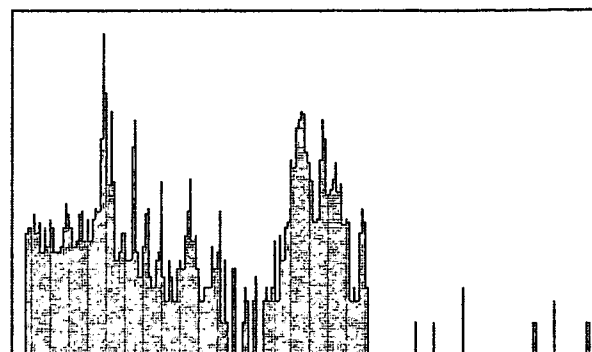
Preset: Live Time 120 sec.

Real Time 123.00 Sec. Live Time 120.00 Sec.

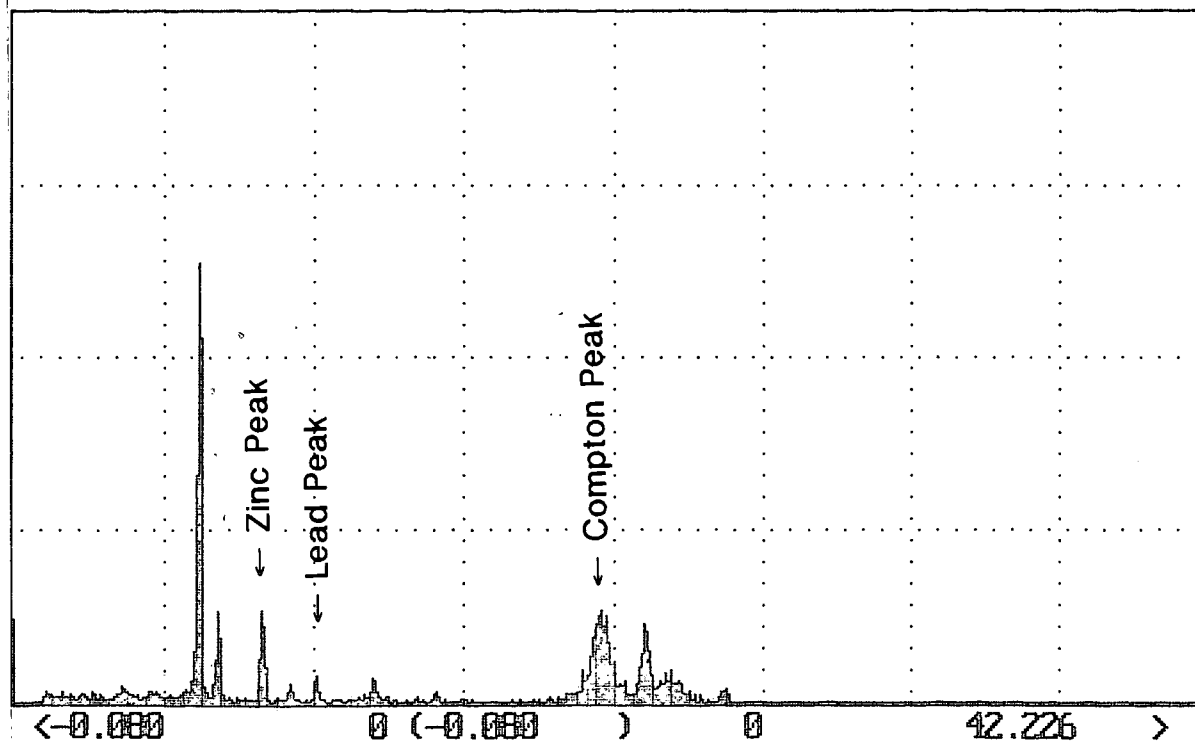
2% Dead Time 0 cps

Cfs 1K

H (1)



Calibration Standard 01665



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: 01666 Cd_109

Energy Range:

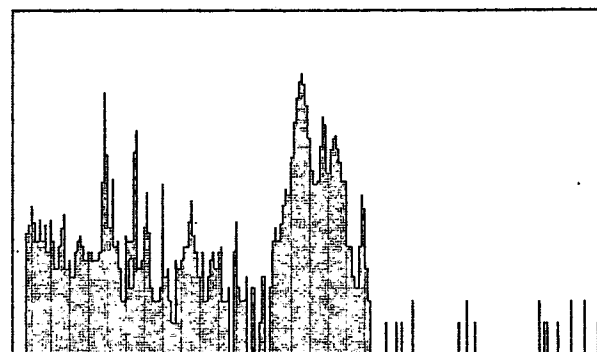
Preset: Live Time 120 sec.

Real Time 123.00 Sec. Live Time 120.00 Sec.

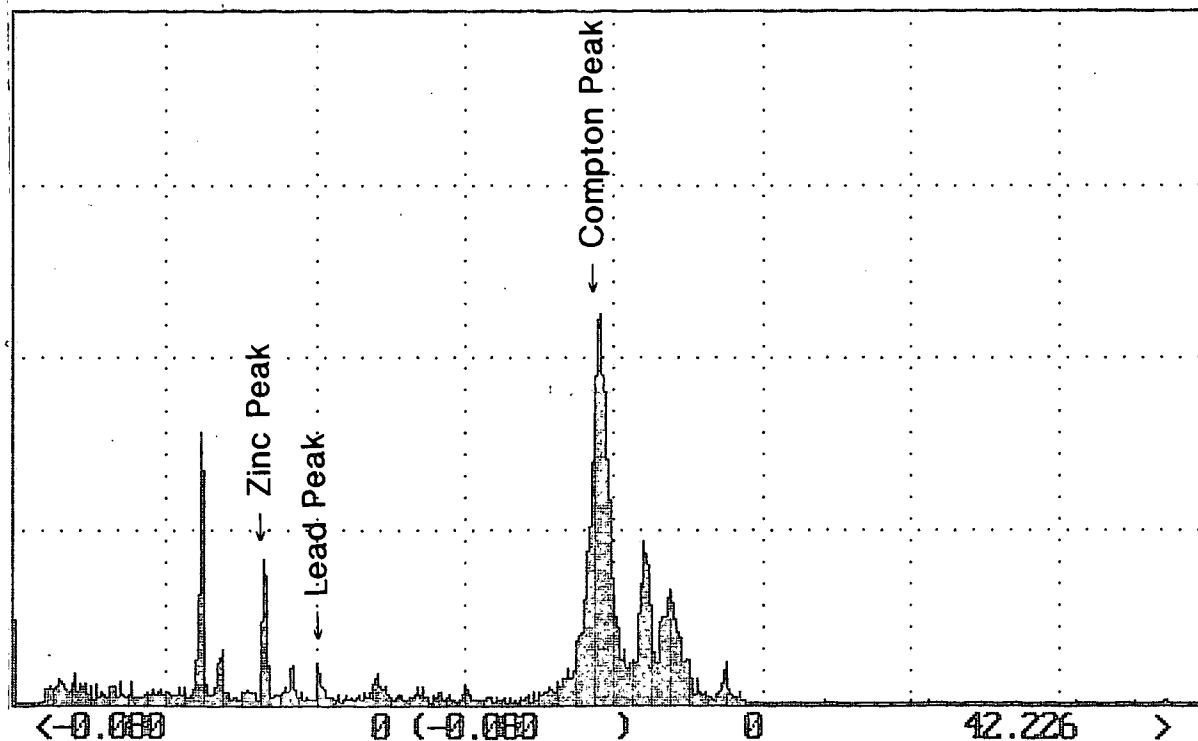
2% Dead Time 0 cps

Cfs 512

H (1)



Calibration Standard 01666



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: 01667 Cd_109

Energy Range:

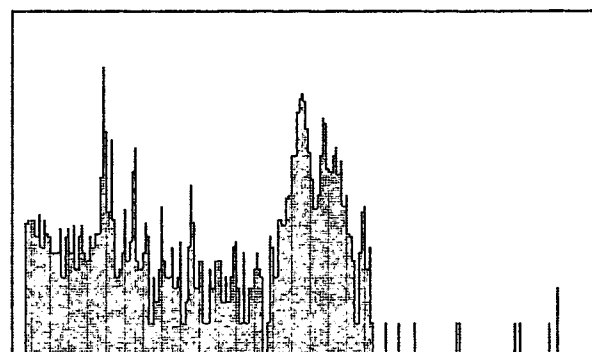
Preset: Live Time 120 sec.

Real Time 123.00 Sec. Live Time 120.00 Sec.

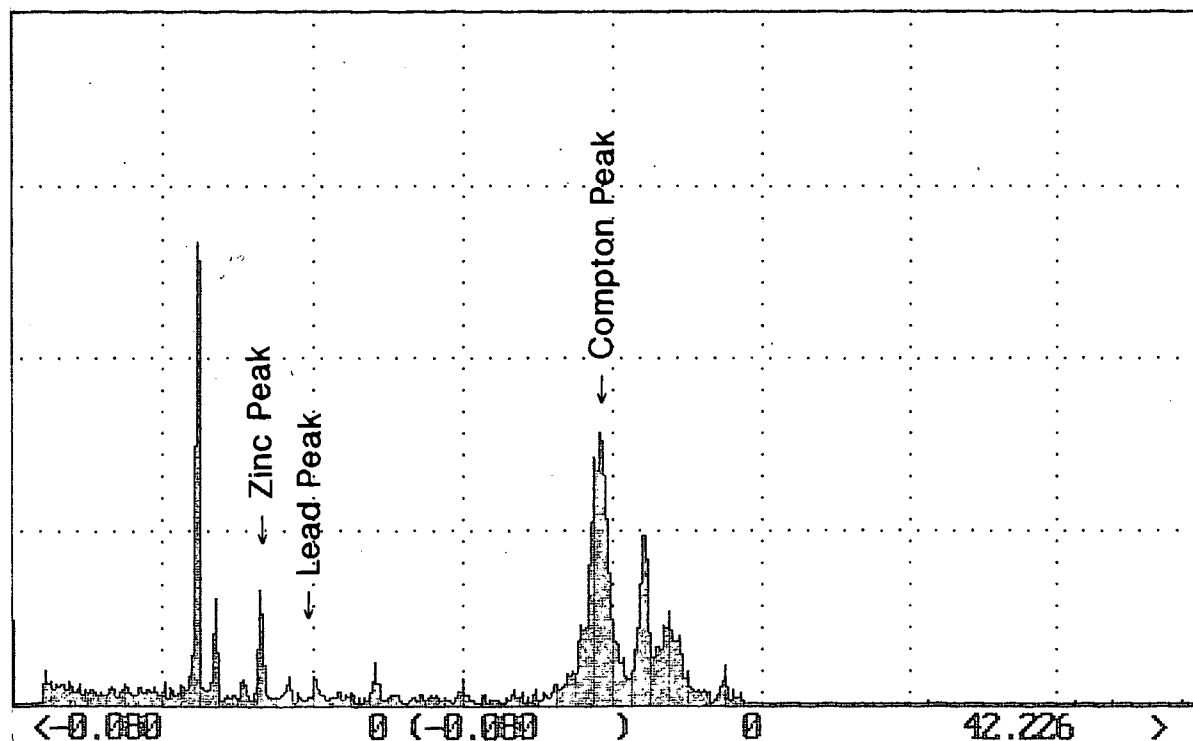
2% Dead Time 0 cps

Cfs 512

H (1)



Calibration Standard 01667



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: 01668 Cl_109

Energy Range:

Preset: Live Time 120 sec.

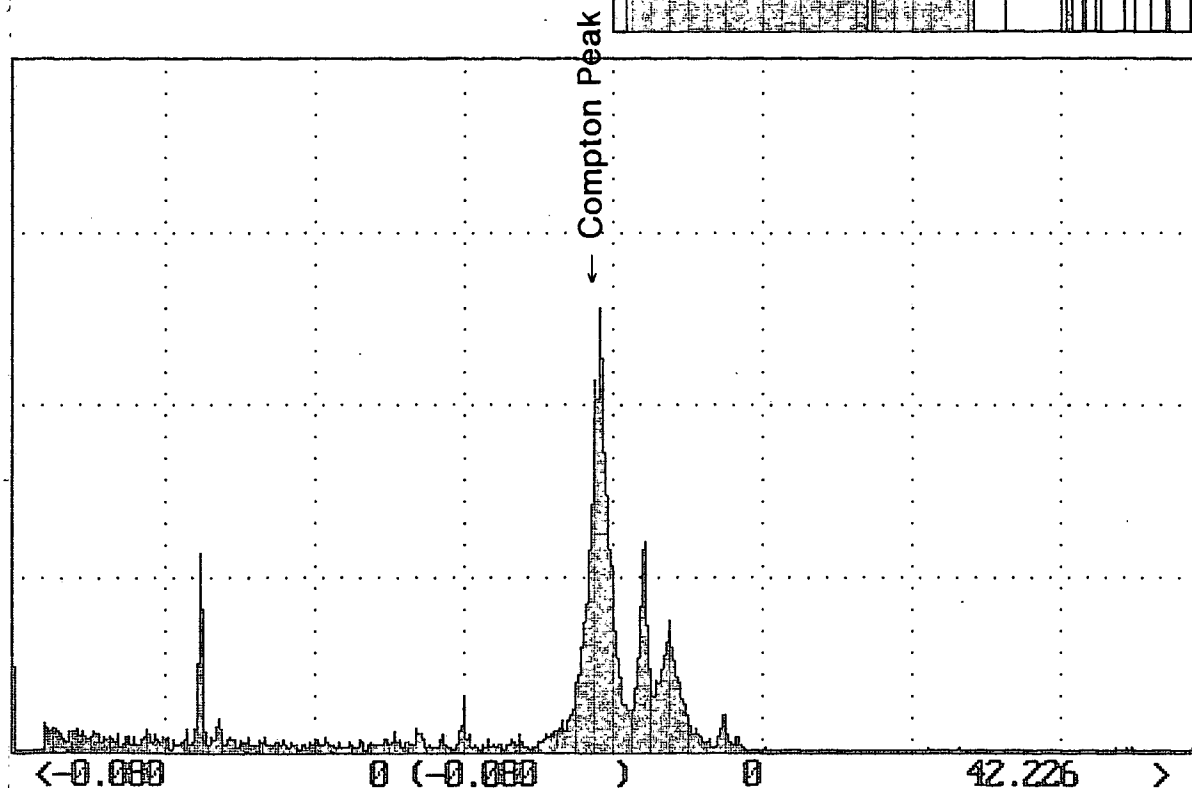
Real Time 123.00 Sec. Live Time 120.00 Sec.

2% Dead Time 0 cps

Cfs 512

H (1)

Calibration Standard 01668



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

HNU X-RAY SEFA/PC (c) V4.00

ID: 01669 Cd_109

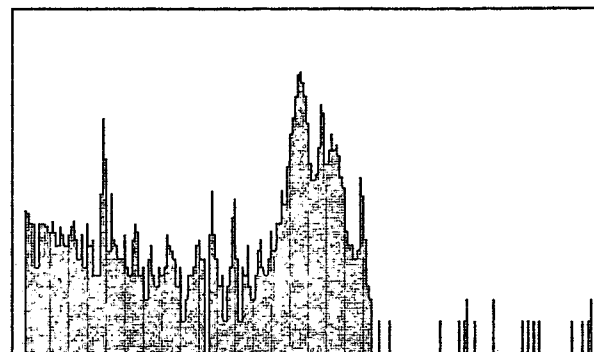
Energy Range:

Preset: Live Time 120 sec.

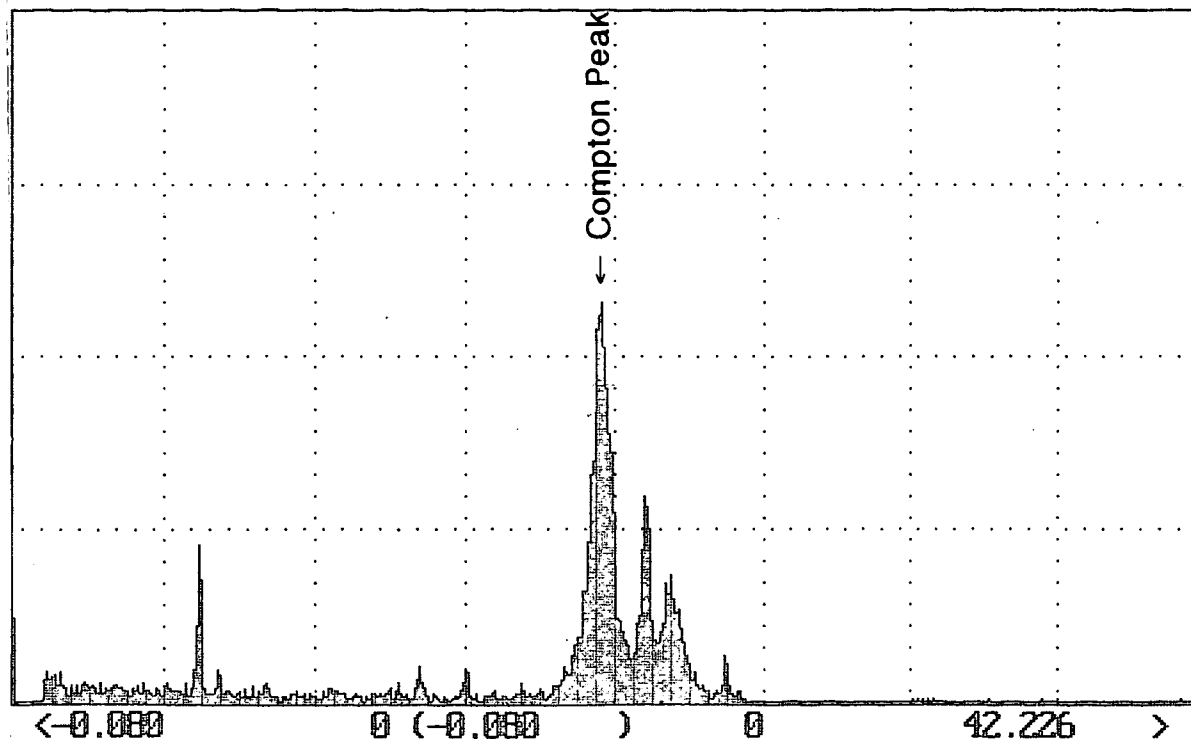
Real Time 123.00 Sec. Live Time 120.00 Sec.

Z% Dead Time 0 cps

Cfs 512 H (1)



Calibration Standard 01669



To Quit Press
<ESC>

F1 HELP

F2 SAVE

F3 PERIODIC TABLE

F4 AUTO ID

F5 ROI MENU

F6 LIN/LOG

F7 BAR/DOT/LINE

F8 KLM MENU

APPENDIX F

CHAIN-OF-CUSTODY RECORDS

CHAIN OF CUSTODY RECORD

PROJ. NO. 92109		PROJECT NAME Hared Property site Wilton, CT Post # 1763		NO. OF CONTAINERS		REMARKS										
SAMPLERS: (Signature) <i>George C. St...</i> <i>Paul R. Groulx</i>						<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); border: 1px solid black; padding: 5px;">metals (low)</div> <div style="flex-grow: 1; border: 1px solid black; margin-left: 10px;"></div> </div>										
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION											
DW001	3/21/92	1642		X	GAGGINO 33 Honey Hill Trail Wilton, CT.	1-1L	X									EPA # 01589
DW002	4/1/92	0810		X	Ron Kelly 201 Mathers St Wilton, CT	1-1L	X									EPA # 01590 (after treatment)
DW003	4/1/92	0845		X	Paul Hared 44 Old Mill Rd Wilton, CT	1-1L	X									EPA # 01591
SB001	4/1/92	0850		X	Paul Hared Property - behind house at base of rock face	1-1L	X									EPA # 01592
SB002	4/1/92	0900		X	Access Road 50 ft before chain	1-1L	X									EPA # 01593
SW001	4/1/92	0945		X	main outlet on site stream sample	1-1L	X									EPA # 01594
SW004	4/1/92	1210		X	Surface Pond water near STA 2+00 150 N	1-1L	X									EPA # 01595
SW003	4/1/92	1220		X	Pond by Macnala's House	1-1L	X									EPA # 01596
SW002	4/1/92	1235		X	Surface unstanding water by STA 3+50 N	1-1L	X									EPA # 01597
RB001	4/1/92	1048		X	Rinsak Blank #1 small hand Auger	1-1L	X									EPA # 01601
RB002	4/1/92	1420		X	Rinsak Blank #2 long Bucket Auger	1-1L	X									EPA # 01602
DW004	4/1/92	1400		X	Macnala 34 Old Mill Rd Residence Wilton CT	1-1L	X									EPA # 01598
SW005	4/1/92	1420		X	Surface water to Ron Kelly	1-1L	X									EPA # 01599
DW005	4/1/92	1620		X	McGarry Residence 34 Old Mill Rd Wilton CT	1-1L	X									EPA # 01600 *

Relinquished by: (Signature) <i>George C. St...</i>	Date / Time 4/2/92 1334	Received by: (Signature) <i>Paul F Killian</i>	Relinquished by: (Signature) <i>Paul F Killian</i>	Date / Time 4/2/92 1400	Received by: (Signature) <i>[Signature]</i>
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature) <i>[Signature]</i>	Date / Time	Received for Laboratory by: (Signature) <i>[Signature]</i>	Date / Time 4/2/92 1:35PM	Remarks OSC Paul Groulx	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

**JFK Federal Building, Rm. 2203
Boston, Massachusetts 02203**

Distribution: Original Accompanies Shipment/ Copy to Coordinator Field Files

[illegible]

APPENDIX G

SAMPLE CARDS

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HALCO PROPERTY STATE CT

COLLECTOR GEORGE STEVENS

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

NH₃
NO₂ + ₃
TKN
T-P
O & G

COD
PCB
X-Ray
Other

METALS

Total

Dissolved

Cd
Cu
Cr (T)
Cr (+6)

Fe
Hg
Mn
Ni

Pb
Sn
Zn

<input checked="" type="checkbox"/>

Other ALL TCP

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01589

PROJECT #

--	--	--	--	--

STATION # DW001

Y Y M M D D

DATE 920331

COLLECTION TIME 1642

SAMPLE TEMP °C

--	--

PROBE-D.O. (mg/l)

--	--	--

pH - S.U.

--	--	--

CONDUCTIVITY
(micromhos/cm)

--	--	--

SALINITY (0/00)

--	--	--

TOTAL DEPTH (ft)

--	--

SAMPLING DEPTH (ft)

--	--	--

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARC STATE WYOMING

COLLECTOR 204 MATH STREET / Ron Kelley

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti ☐
BOD ☐
TSS ☐
Turb ☐
Organics ☐
VOA's ☐

NH₃ ☐
NO₂ + 3 ☐
TKN ☐
T-P ☐
O & G ☐

COD ☐
PCB ☐
X-Ray ☐
Other ☐

METALS

Cd ☐
Cu ☐
Cr (T) ☐
Cr (+6) ☐

Total
Fe ☐
Hg ☐
Mn ☐
Ni ☐

Dissolved
Pb ☐
Sn ☐
Zn ☐
Other All rep

Residual well (over)

LAB CODE N° 01590

PROJECT # ☐☐☐☐☐☐

STATION # DW002

Y Y M M D D

DATE 9 20 40 1

COLLECTION TIME 0810

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐ . ☐

pH - S.U. ☐ . ☐

CONDUCTIVITY (micromhos/cm) ☐ . ☐

SALINITY (0/00) ☐ . ☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐ . ☐

EPA R-1 7500-30

*Unpreserved Sample

Well is a Cistern - Surface water
collected in a Cistern - Soda Ash and Chlorine
Added - then run thru a Carbon filter.
Sample collected at top in Wash room.

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE W, Conn, Ct

COLLECTOR Paul HARCO
44 old mill Rd
Bn Paul Groulx

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti	<input type="checkbox"/>	NH ₃	<input type="checkbox"/>	COD	<input type="checkbox"/>
BOD	<input type="checkbox"/>	NO ₂ + 3	<input type="checkbox"/>	PCB	<input type="checkbox"/>
TSS	<input type="checkbox"/>	TKN	<input type="checkbox"/>	X-Ray	<input type="checkbox"/>
Turb	<input type="checkbox"/>	T-P	<input type="checkbox"/>	Other	<input type="checkbox"/>
Organics	<input type="checkbox"/>	O & G	<input type="checkbox"/>		
VOA's	<input type="checkbox"/>				

METALS		Total	Dissolved
Cd	<input type="checkbox"/>	Fe	<input type="checkbox"/>
Cu	<input type="checkbox"/>	Hg	<input type="checkbox"/>
Cr (T)	<input type="checkbox"/>	Mn	<input type="checkbox"/>
Cr (+6)	<input type="checkbox"/>	Ni	<input type="checkbox"/>
		Other	<u>All ICP</u>

EPA R-1 7500-30 *Unpreserved Sample

LAB CODE N° 01591

PROJECT # ☐☐☐☐☐☐

STATION # DW003

Y Y M M D D

DATE 9/20/01

COLLECTION TIME 0845

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐ . ☐

pH - S.U. ☐☐ . ☐

CONDUCTIVITY (micromhos/cm) ☐☐ . ☐

SALINITY (0/00) ☐☐ . ☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐ . ☐

Hand-dug well collected at bottom

90' well

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE PA

COLLECTOR PAUL HARCO'S House Property
Rock wall - surface Breakout
By P. Goulet

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

NH₃
NO₂ + 3
TKN
T-P
O & G

COD
PCB
X-Ray
Other

METALS

Cd
Cu
Cr (T)
Cr (+6)

Total

Fe
Hg
Mn
Ni

Dissolved

Pb
Sn
Zn
Other

*Unpreserved Sample

ALL
ICAB

LAB CODE N^o 01592

PROJECT #

STATION # 58001

Y Y M M D D

DATE 040192

COLLECTION TIME 0850

SAMPLE TEMP °C

PROBE-D.O. (mg/l)

pH - S.U.

CONDUCTIVITY
(micromhos/cm)

SALINITY (0/00)

TOTAL DEPTH (ft)

SAMPLING DEPTH (ft)

EPA R-1 7500-30

— Surface Breakout Behind Pond HARCO
House - Rock wall / collected in
Pool at Base

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE N. CT

COLLECTOR Breakout in Access Road HARCO Property P. Gault

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti	<input type="checkbox"/>	NH ₃	<input type="checkbox"/>	COD	<input type="checkbox"/>
BOD	<input type="checkbox"/>	NO ₂ + 3	<input type="checkbox"/>	PCB	<input type="checkbox"/>
TSS	<input type="checkbox"/>	TKN	<input type="checkbox"/>	X-Ray	<input type="checkbox"/>
Turb	<input type="checkbox"/>	T-P	<input type="checkbox"/>	Other	<input type="checkbox"/>
Organics	<input type="checkbox"/>	O & G	<input type="checkbox"/>		
VOA's	<input type="checkbox"/>				

METALS

Cd	<input type="checkbox"/>	Fe	<input type="checkbox"/>	Pb	<input type="checkbox"/>
Cu	<input type="checkbox"/>	Hg	<input type="checkbox"/>	Sn	<input type="checkbox"/>
Cr (T)	<input type="checkbox"/>	Mn	<input type="checkbox"/>	Zn	<input type="checkbox"/>
Cr (+6)	<input type="checkbox"/>	Ni	<input type="checkbox"/>	Other	<u>ALL TCP</u>

*Unpreserved Sample

LAB CODE N° 01593

PROJECT # ☐☐☐☐☐☐

STATION # 5B002

Y Y M M D D

DATE 9/20/01

COLLECTION TIME 0900

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐ . ☐

pH - S.U. ☐ . ☐

CONDUCTIVITY (micromhos/cm) ☐ . ☐

SALINITY (0/00) ☐ . ☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐ . ☐

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Site STATE Connecticut
COLLECTOR R. Gault

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

NH₃
NO₂ + 3
TKN
T-P
O & G

COD
PCB
X-Ray
Other

METALS

Cd
Cu
Cr (T)
Cr (+6)

Total

Fe
Hg
Mn
Ni

Dissolved

Pb
Sn
Zn
Other

*Unpreserved Sample

LAB CODE N° 01594

PROJECT #

STATION # 56007

Y Y M M D D

DATE 9/20/90

COLLECTION TIME 0945

SAMPLE TEMP °C

PROBE-D.O. (mg/l)

pH - S.U.

CONDUCTIVITY
(micromhos/cm)

SALINITY (0/00)

TOTAL DEPTH (ft)

SAMPLING DEPTH (ft)

MAIN OUTLET off-site
SURFACE STREAM SAMPLE

ICP

EPA R-1 7500-30

Station Location:
1000 feet down Smeadville
Trail - STATION 50 feet before
Site Clearance - this stream
is the only surface outlet
from the Site.

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE W. Va.

COLLECTOR Paul Brandy

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti ☐
BOD ☐
TSS ☐
Turb ☐
Organics ☐
VOA's ☐

NH₃ ☐
NO₂ + 3 ☐
TKN ☐
T-P ☐
O & G ☐

COD ☐
PCB ☐
X-Ray ☐
Other ☐

METALS

Cd ☐
Cu ☐
Cr (T) ☐
Cr (+6) ☐

Total

Fe ☐
Hg ☐
Mn ☐
Ni ☐

Dissolved

Pb ☐
Sn ☐
Zn ☐
Other ☐

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N^o 01595

PROJECT # ☐☐☐☐☐☐

STATION # 56004

Y Y M M D D

DATE 9/20/01

COLLECTION TIME 1210

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

Surface Pond Water - (SOV)

STA 2+00, 150 N

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE Wisconsin

COLLECTOR John Coulx

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

☐
☐
☐
☐
☐
☐

NH₃
NO₂ + 3
TKN
T-P
O & G

☐
☐
☐
☐
☐

COD
PCB
X-Ray
Other

☐
☐
☐

METALS

Total

Dissolved

Cd
Cu
Cr (T)
Cr (+6)

☐
☐
☐
☐

Fe
Hg
Mn
Ni

☐
☐
☐
☐

Pb
Sn
Zn

☐
☐
☐

Other

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01596

PROJECT # ☐☐☐☐☐☐

STATION # 52003

Y Y M M D D

DATE 9/20/07

COLLECTION TIME 1220

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY
(micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

Surface Water - (over)

at end of fill area Behind Marchella's House

To the the of the water B-3 Two large cluster Black Maples

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE W. CT

COLLECTOR Phonix

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti ☐
BOD ☐
TSS ☐
Turb ☐
Organics ☐
VOA's ☐

NH₃ ☐
NO₂ + 3 ☐
TKN ☐
T-P ☐
O & G ☐

COD ☐
PCB ☐
X-Ray ☐
Other ☐

METALS

Total

Dissolved

Cd ☐
Cu ☐
Cr (T) ☐
Cr (+6) ☐

Fe ☐
Hg ☐
Mn ☐
Ni ☐

Pb ☐
Sn ☐
Zn ☐
Other ☐

all

ICAP

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01597

PROJECT # ☐☐☐☐☐☐

STATION # 54004

Y Y M M D D

DATE 9/20/90

COLLECTION TIME 7/2/9

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.

pH - S.U. ☐☐.

CONDUCTIVITY (micromhos/cm) ☐☐.

SALINITY (0/00) ☐☐.

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.

Surface Water - on site

[3+50, 50N]
Sta 3+50, +50 - N
(Surface Water) pond on site
Heavy Iron Colored Soil staining

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE Willam Ct.
COLLECTOR Paul Groulx

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti ☐
BOD ☐
TSS ☐
Turb ☐
Organics ☐
VOA's ☐

NH₃ ☐
NO₂ + 3 ☐
TKN ☐
T-P ☐
O & G ☐

COD ☐
PCB ☐
X-Ray ☐
Other _____

METALS

Cd ☐
Cu ☐
Cr (T) ☐
Cr (+6) ☐

Total

Fe ☐
Hg ☐
Mn ☐
Ni ☐

Dissolved

Pb ☐
Sn ☐
Zn ☐
Other _____

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01598

PROJECT # ☐☐☐☐☐☐

STATION # DW004

Y Y M M D D

DATE 920401

COLLECTION TIME 1400

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐ . ☐

pH - S.U. ☐☐ . ☐

CONDUCTIVITY (micromhos/cm) ☐☐ . ☐

SALINITY (0/00) ☐☐ . ☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐ . ☐

• OUTSIDE TAP •

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE W. CT

COLLECTOR Paul Brown

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

NH₃
NO₂ + 3
TKN
T-P
O & G

COD
PCB
X-Ray
Other

METALS

Total

Dissolved

Cd
Cu
Cr (T)
Cr (+6)

Fe
Hg
Mn
Ni

Pb
Sn
Zn
Other

EPA R-1 7500-30

*Unpreserved Sample

ICAP (LOW)

LAB CODE N° 01599

PROJECT #

STATION # 52005T

Y Y M M D D

DATE 9/20/07

COLLECTION TIME 1420

SAMPLE TEMP °C

PROBE-D.O. (mg/l)

pH - S.U.

CONDUCTIVITY
(micromhos/cm)

SALINITY (0/00)

TOTAL DEPTH (ft)

SAMPLING DEPTH (ft)

Surface Water Feeding into Resident

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE W. CT

COLLECTOR Paul Brown

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

NH₃
NO₂ + 3
TKN
T-P
O & G

COD
PCB
X-Ray
Other

METALS

Total

Dissolved

Cd
Cu
Cr (T)
Cr (+6)

Fe
Hg
Mn
Ni

Pb
Sn
Zn
Other

EPA R-1 7500-30

*Unpreserved Sample

ICAP

LAB CODE N° 01600

PROJECT #

STATION # DW005

Y Y M M D D

DATE 9/20/07

COLLECTION TIME 1630

SAMPLE TEMP °C

PROBE-D.O. (mg/l)

pH - S.U.

CONDUCTIVITY
(micromhos/cm)

SALINITY (0/00)

TOTAL DEPTH (ft)

SAMPLING DEPTH (ft)

Residential Well water

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Harco Property STATE Wilton CT

COLLECTOR Tim Jones

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti	<input type="checkbox"/>	NH ₃	<input type="checkbox"/>	COD	<input type="checkbox"/>
BOD	<input type="checkbox"/>	NO ₂ + 3	<input type="checkbox"/>	PCB	<input type="checkbox"/>
TSS	<input type="checkbox"/>	TKN	<input type="checkbox"/>	X-Ray	<input type="checkbox"/>
Turb	<input type="checkbox"/>	T-P	<input type="checkbox"/>	Other	<input type="checkbox"/>
Organics	<input type="checkbox"/>	O & G	<input type="checkbox"/>		
VOA's	<input type="checkbox"/>				

METALS

Cd	<input type="checkbox"/>	Fe	<input type="checkbox"/>	Pb	<input type="checkbox"/>
Cu	<input type="checkbox"/>	Hg	<input type="checkbox"/>	Sn	<input type="checkbox"/>
Cr (T)	<input type="checkbox"/>	Mn	<input type="checkbox"/>	Zn	<input type="checkbox"/>
Cr (+6)	<input type="checkbox"/>	Ni	<input type="checkbox"/>	Other	<u>All ICP</u>

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01601

PROJECT # ☐☐☐☐☐☐

STATION # R8001

Y Y M M D D

DATE 920401

COLLECTION TIME 1048

SAMPLE TEMP °C ☐

PROBE-D.O. (mg/l) ☐.

pH - S.U. ☐.

CONDUCTIVITY (micromhos/cm) ☐.

SALINITY (0/00) ☐.

TOTAL DEPTH (ft) ☐

SAMPLING DEPTH (ft) ☐.

Rinsed Blank #1 Small Hand Auger

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Harco Property STATE Wilton, CT

COLLECTOR Tim Jones

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti	<input type="checkbox"/>	NH ₃	<input type="checkbox"/>	COD	<input type="checkbox"/>
BOD	<input type="checkbox"/>	NO ₂ + 3	<input type="checkbox"/>	PCB	<input type="checkbox"/>
TSS	<input type="checkbox"/>	TKN	<input type="checkbox"/>	X-Ray	<input type="checkbox"/>
Turb	<input type="checkbox"/>	T-P	<input type="checkbox"/>	Other	<input type="checkbox"/>
Organics	<input type="checkbox"/>	O & G	<input type="checkbox"/>		
VOA's	<input type="checkbox"/>				

METALS

Cd	<input type="checkbox"/>	Fe	<input type="checkbox"/>	Pb	<input type="checkbox"/>
Cu	<input type="checkbox"/>	Hg	<input type="checkbox"/>	Sn	<input type="checkbox"/>
Cr (T)	<input type="checkbox"/>	Mn	<input type="checkbox"/>	Zn	<input type="checkbox"/>
Cr (+6)	<input type="checkbox"/>	Ni	<input type="checkbox"/>	Other	<u>ICP - all</u>

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01602

PROJECT # ☐☐☐☐☐☐

STATION # R8002

Y Y M M D D

DATE 920401

COLLECTION TIME 1420

SAMPLE TEMP °C ☐

PROBE-D.O. (mg/l) ☐.

pH - S.U. ☐.

CONDUCTIVITY (micromhos/cm) ☐.

SALINITY (0/00) ☐.

TOTAL DEPTH (ft) ☐

SAMPLING DEPTH (ft) ☐.

Rinsed Blank #2 Long Bucket Auger

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Hanco Property STATE Wilton, CT

COLLECTOR George Stevens

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

NH₃
NO₂ + 3
TKN
T-P
O & G

COD
PCB
X-Ray
Other

METALS

Cd
Cu
Cr (T)
Cr (+6)

Total

Fe
Hg
Mn
Ni

Dissolved

Pb
Sn
Zn
Other

EPA R-1 7500-30

*Unpreserved Sample

TCP-all
TCLP

Composit
Sub surface Soil

LAB CODE N^o 01603

PROJECT #

STATION #

Y Y M M D D

DATE 9/20/01

COLLECTION TIME 1408

SAMPLE TEMP °C

PROBE-D.O. (mg/l)

pH - S.U.

CONDUCTIVITY
(micromhos/cm)

SALINITY (0/00)

TOTAL DEPTH (ft)

SAMPLING DEPTH (ft)

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Hanco Property STATE Wilton, CT

COLLECTOR George Stevens

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

NH₃
NO₂ + 3
TKN
T-P
O & G

COD
PCB
X-Ray
Other

METALS

Cd
Cu
Cr (T)
Cr (+6)

Total

Fe
Hg
Mn
Ni

Dissolved

Pb
Sn
Zn
Other

EPA R-1 7500-30

*Unpreserved Sample

TCP-all
TCLP

Composit
Sub surface Soil Sample

LAB CODE N^o 01604

PROJECT #

STATION #

Y Y M M D D

DATE 9/20/01

COLLECTION TIME 1430

SAMPLE TEMP °C

PROBE-D.O. (mg/l)

pH - S.U.

CONDUCTIVITY
(micromhos/cm)

SALINITY (0/00)

TOTAL DEPTH (ft)

SAMPLING DEPTH (ft)

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE Wilton, CT

COLLECTOR George Stevens

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

NH₃
NO₂ + 3
TKN
T-P
O & G

COD
PCB
X-Ray
Other

METALS

Cd
Cu
Cr (T)
Cr (+6)

Total

Fe
Hg
Mn
Ni

Dissolved

Pb
Sn
Zn
Other

ICP all

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01605

PROJECT #

STATION # 1030

Y Y M M D D

DATE 9/20/01

COLLECTION TIME 1430

SAMPLE TEMP °C

PROBE-D.O. (mg/l)

pH - S.U.

CONDUCTIVITY (micromhos/cm)

SALINITY (0/00)

TOTAL DEPTH (ft)

SAMPLING DEPTH (ft)

Sub surface Soil Sample # 029 Duplicate

Composit

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT HARCO Property STATE Wilton, CT

COLLECTOR George Stevens

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

NH₃
NO₂ + 3
TKN
T-P
O & G

COD
PCB
X-Ray
Other

METALS

Cd
Cu
Cr (T)
Cr (+6)

Total

Fe
Hg
Mn
Ni

Dissolved

Pb
Sn
Zn
Other

ICP

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01606

PROJECT #

STATION # 1031

Y Y M M D D

DATE 9/20/01

COLLECTION TIME 1455

SAMPLE TEMP °C

PROBE-D.O. (mg/l)

pH - S.U.

CONDUCTIVITY (micromhos/cm)

SALINITY (0/00)

TOTAL DEPTH (ft)

SAMPLING DEPTH (ft)

Sub surface Soil Sample

Composit

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Harco Property STATE Wilton, CT

COLLECTOR George Stevens

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

☐
☐
☐
☐
☐
☐

NH₃
NO₂ + 3
TKN
T-P
O & G

☐
☐
☐
☐
☐

COD
PCB
X-Ray
Other

☐
☐
☐

METALS

Total

Dissolved

Cd
Cu
Cr (T)
Cr (+6)

☐
☐
☐
☐

Fe
Hg
Mn
Ni

☐
☐
☐
☐

Pb
Sn
Zn

☐
☐
☐

Other

TCP-all

TCLP

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01607

PROJECT # ☐☐☐☐☐☐

STATION # ☐☐☐☐☐☐032

Y Y M M D D

DATE 9/20/01

COLLECTION TIME 1510

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

Composite
Subsurface Soil Sample

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Harco Property STATE Wilton, CT

COLLECTOR George Stevens

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE)

Bacti
BOD
TSS
Turb
Organics
VOA's

☐
☐
☐
☐
☐
☐

NH₃
NO₂ + 3
TKN
T-P
O & G

☐
☐
☐
☐
☐

COD
PCB
X-Ray
Other

☐
☐
☐

METALS

Total

Dissolved

Cd
Cu
Cr (T)
Cr (+6)

☐
☐
☐
☐

Fe
Hg
Mn
Ni

☐
☐
☐
☐

Pb
Sn
Zn

☐
☐
☐

Other

TCP-all

TCLP

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE N° 01608

PROJECT # ☐☐☐☐☐☐

STATION # ☐☐☐☐☐☐033

Y Y M M D D

DATE 9/20/01

COLLECTION TIME 1525

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

Composite
Subsurface Soil Sample

H

APPENDIX H

SAMPLE RELEASE CARDS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Date:

3/31/92

Company:

PRIVATE RESIDENT

Address:

33 HONEY HILL TRAIL
WILTON, CT

Contact Person:

Ann Caggiano

Phone Number:

544-8077

In accordance with Section 104(e)(1)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9604(e)(1)(B), the following receipt is given for sample(s) taken from the above-referenced property. The sample(s) are identified as follows:

1. Station #: 1692, Lab Code #: 01589, Analysis: LEAD
Time obtained: 3/31/92, Date: 3/31/92
(a) Description of the sample location: SPRINKLER SYSTEM in BACKYARD
(b) Description of the sample: _____
2. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____
(b) Description of the sample: _____
3. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____
(b) Description of the sample: _____

Copies of the analytical results will be forwarded to the listed contact person, upon receipt.

PAUL R. GROUTX

(Print Name)

Paul R. Groutx 3/31/92

Ann M. Caggiano

Ann M. Caggiano

US EPA Representative (Date)

Household rep. (Date)

CONCURRENCES

SYMBOL							
SURNAME							
DATE							



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

ENVIRONMENTAL SERVICES DIVISION

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

Date:

4/1/92

Company:

Residential Home
Address: 204 MATHER STREET
WILTON, CT

Contact Person:

Ron Kelly

Phone Number:

203 544-8845

In accordance with Section 104(e)(1)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9604(e)(1)(B), the following receipt is given for sample(s) taken from the above-referenced property. The sample(s) are identified as follows:

1. Station #: DW002, Lab Code #: 01590, Analysis: Lead/Zinc
Time obtained: 0816, Date: 4-1-92
(a) Description of the sample location: WASH ROOM after Carbon filter
Soda Asst-Chlorine Being Added
(b) Description of the sample: Drinking Water (NOTE: SHALLOW well
No deep well)
2. Station #: _____, Lab Code #: _____, Analysis: (CISTERN UTILIZING)
Time obtained: _____, Date: (Surface Water)
(a) Description of the sample location: _____
(b) Description of the sample: _____
3. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____
(b) Description of the sample: _____

Copies of the analytical results will be forwarded to the listed contact person, upon receipt.

PAUL R. Groux

(Print Name)

Paul R. Groux 4/1/92

US EPA Representative

(Date)

Paul Kelly

Household rep

(Date)

4/1/92



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

ENVIRONMENTAL SERVICES DIVISION

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

Date: 4/1/92Company: Private Resident
Address: 44 Old Mill Rd
WILTON, CTContact Person: PAUL HARCO
Phone Number: 544-9079 (203)

In accordance with Section 104(e)(1)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9604(e)(1)(B), the following receipt is given for sample(s) taken from the above-referenced property. The sample(s) are identified as follows:

1. Station #: DW003, Lab Code #: 01591, Analysis: METALS
Time obtained: 0845, Date: 4/1/92
(a) Description of the sample location: 96' feet well 12 gal/min
(b) Description of the sample: _____

2. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____
(b) Description of the sample: _____

3. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____
(b) Description of the sample: _____

Copies of the analytical results will be forwarded to the listed contact person, upon receipt.

PAUL GROCK

(Print Name)

Paul R. Grock

US EPA Representative

4/1/92

(Date)

Paul P Harco

Household rep.

(Date)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

ENVIRONMENTAL SERVICES DIVISION

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

Date: 4/1/92

Company: Private Resident
Address: 84 Old Mill Road
Wilton, CT

Contact Person: George + Janet Macchala
Phone Number: 544-8930

In accordance with Section 104(e)(1)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9604(e)(1)(B), the following receipt is given for 1 sample(s) taken from the above-referenced property. The sample(s) are identified as follows:

1. Station #: DW004, Lab Code #: 01598, Analysis: Metal
Time obtained: _____, Date: _____
(a) Description of the sample location: Outside TAP - 167 feet deep well
(b) Description of the sample: drinking water

2. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____
(b) Description of the sample: _____

3. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____
(b) Description of the sample: _____

Copies of the analytical results will be forwarded to the listed contact person, upon receipt.

Paul R. Groce
(Print Name)

Paul R. Groce
US EPA Representative

4/1/92 George + Janet Macchala
(Date) Household rep. (Date)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

ENVIRONMENTAL SERVICES DIVISION

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

Date: 4/1/92Company: Private Resident
Address: 204 MATHEN
WILTON, CT.Contact Person: RON KELLY
Phone Number: 544-8845

In accordance with Section 104(e)(1)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9604(e)(1)(B), the following receipt is given for one sample(s) taken from the above-referenced property. The sample(s) are identified as follows:

- EPA
1. Station #: SW005, Lab Code #: 01599, Analysis: MEALS
Time obtained: 1420, Date: 4-1-92
(a) Description of the sample location: Surface Water Stream
feeding Cistern for Residential Use, Source Located on HAKCO
Property Behind Coggiano Property - Perched Pond 1/4 Acre in Size
(b) Description of the sample: SAMPLE - ~~Surface Water~~ Cistern
Water Source Located up hill. (Not a Cistern)
2. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____

(b) Description of the sample: _____

3. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____

(b) Description of the sample: _____

Copies of the analytical results will be forwarded to the listed contact person, upon receipt.

PAUL R. Groulx
(Print Name)Paul R. Groulx 4/1/92
US EPA Representative (Date)

Household rep.

(Date)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

ENVIRONMENTAL SERVICES DIVISION

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

Date: _____

Company: Private Resident
Address: Box 507
Georgetown, CTContact Person: Veronica McGarry
Phone Number: 544-8501

In accordance with Section 104(e)(1)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9604(e)(1)(B), the following receipt is given for sample(s) taken from the above-referenced property. The sample(s) are identified as follows:

1. Station #: 1005, Lab Code #: 01600, Analysis: METAL
Time obtained: 1620, Date: 4/2/92
(a) Description of the sample location: Kitchen TAP - Resident Located next to Peter HARCO Resident
(b) Description of the sample: drilled Residential well - at 34 old mill Road

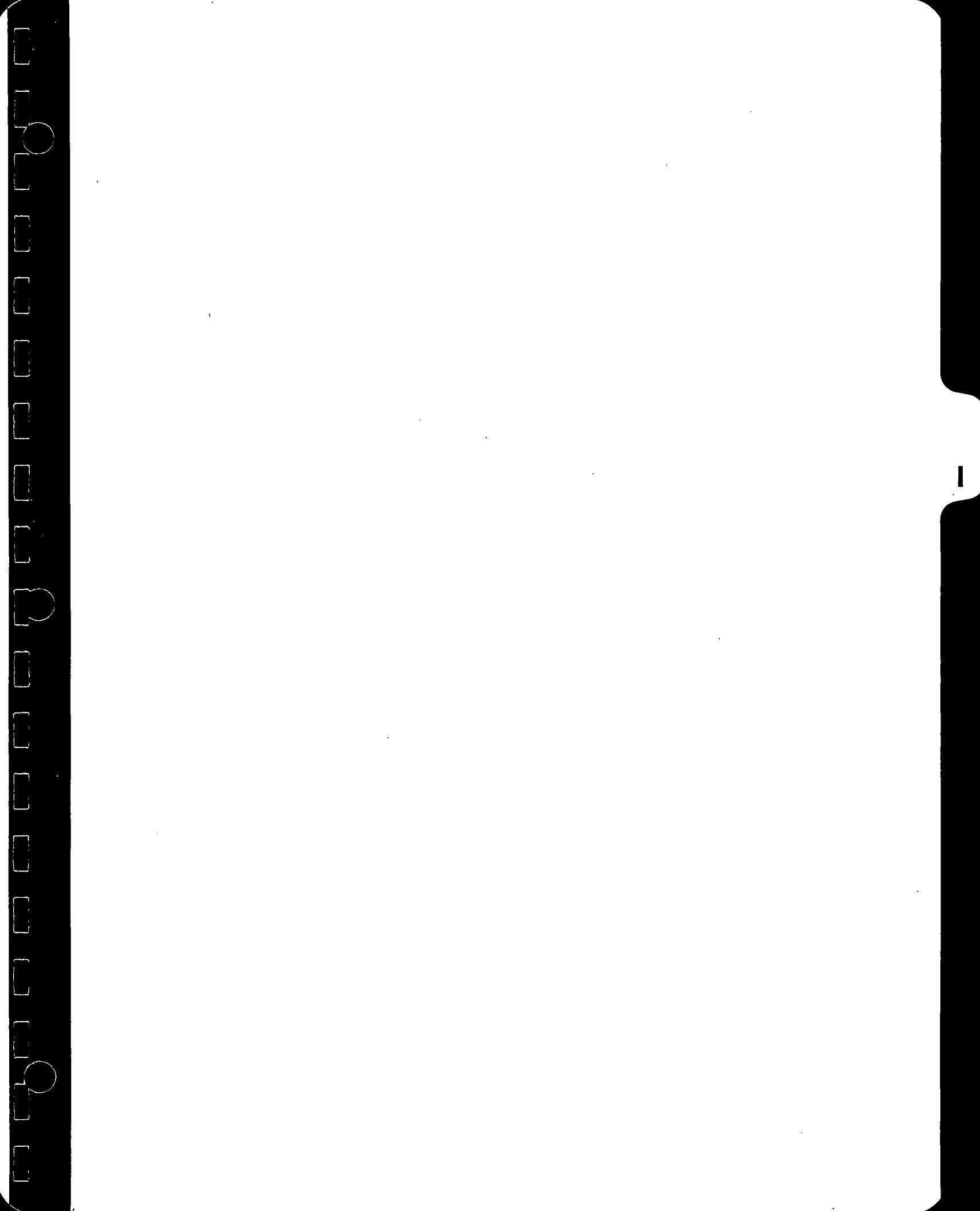
2. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____
(b) Description of the sample: _____

3. Station #: _____, Lab Code #: _____, Analysis: _____
Time obtained: _____, Date: _____
(a) Description of the sample location: _____
(b) Description of the sample: _____

Copies of the analytical results will be forwarded to the listed contact person, upon receipt.

Eric R. Groulx
(Print Name)

Veronica McGarry 4/1/92 George McGarry
US EPA Representative (Date) Household rep. (Date)



APPENDIX I

NERL ANALYTICAL REPORT ON MARCH 1992 SAMPLES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173

MEMORANDUM

PN: 92109

DATE: May 13, 1992

SUBJ: Harco Property

FROM: Michael Dowling and Elio Goffi, EPA Chemists
Steve Heller, ESAT
MD *EG*
S.H.

TO: Paul Groulx
Site Evaluation and Response Section I

THRU: Dr. William J. Andrade
Chief, Chemistry Section *WJA*
5/13/92

Analytical Procedure:

Preparation Method for water samples: 200.7 App. Rev. 1.3 as stated in the "Code of Federal Regulations, Vol. 53, No. 33, pages 5142-5147, 3/21/88." (SOP I-17, 9/91) DCN, CH-001/88.

Soil Preparation and ICP Analysis Method:

200.7 CLP-M as stated in "The U.S. EPA Contract Laboratory Program, Document #1LM01.0 3/90" (SOP I-17, 9/91) DCN, CH-001/88.

Date Samples Received by Laboratory: 4/2/92

Sample Analysis Starting Date: 4/24/92

File name: 92109WA.ICP

Results, mg/L

	<u>01589</u>	<u>01590</u>	<u>01591</u>	<u>01592</u>	<u>01593</u>	<u>01594</u>
Ag	K.005	K.005	0.006	K.005	K.005	K.005
As	K.013	K.013	K.013	K.013	K.013	K.013
Ba	0.009	0.023	0.094	0.032	0.018	0.024
Be	K.002	K.002	K.002	K.002	K.002	K.002
Cd	K.003	K.003	K.003	K.003	K.003	K.003
Co	K.003	K.003	K.003	K.003	K.003	K.003
Cr	K.003	K.003	K.003	K.003	K.003	K.003
Cu	JK.105*	JK.105	JK.105	JK.105	JK.105	JK.105
Mn	0.042	0.003	0.005	0.020	0.017	0.029
Ni	K.004	K.004	K.004	K.004	K.004	K.004
Pb	K.020	K.020	K.020	K.020	K.020	K.020
Se	K.015	K.015	K.015	K.015	K.015	K.015
V	K.004	K.004	K.004	K.004	K.004	K.004
Zn	0.091	J+.035	J.042	KJ.027	J.043	JK.027
Al	K.013	K.013	K.013	0.395	0.472	0.094
Fe	.170	0.062	0.085	0.656	0.725	0.377
Ca	8.79	5.49	32.3	7.80	3.59	15.5
Mg	3.08	1.80	5.19	1.56	1.32	2.65

* - IDL raised due to blank problem

+ - Data approximated due to blank problem

K = less than

	<u>01595</u>	<u>01596</u>	<u>01597</u>	<u>01598</u>	<u>01599</u>	<u>01600</u>	<u>01601</u>	<u>01602</u>
Ag	K.005	K.005	K.005	K.005	K.005	K.005	K.005	K.005
S	K.013	K.013	K.013	K.013	K.013	K.013	K.013	K.013
Pa	0.063	0.055	0.082	0.044	0.032	K.005	K.005	K.005
Be	K.002	K.002	K.002	K.002	K.002	K.002	K.002	K.002
d	K.003	K.003	K.003	K.003	K.003	K.003	K.003	K.003
Co	0.004	K.003	K.003	K.003	K.003	K.003	K.003	K.003
r	K.003	K.003	K.003	K.003	0.003	K.003	K.003	0.020
Cu	JK.105	JK.105	JK.105	JK.105	JK.105	JK.105	JK.105	JK.105
Mn	0.735	0.619	0.439	0.211	K.003	0.020	0.062	0.064
i	K.004	K.004	0.006	0.006	0.006	0.004	0.638	0.026
Pb	K.020	K.020	.008	K.020	K.020	K.020	K.020	K.020
e	K.015	K.015	K.015	K.015	K.015	K.015	K.015	K.015
V	K.004	K.004	K.004	K.004	K.004	K.004	K.004	K.004
Zn	0.447	0.180	2.68	JK.027	JK.027	JK.027	J.032	J.043
l	0.140	0.108	0.609	K.013	0.031	0.015	0.032	0.037
Fe	6.49	2.88	10.52	1.10	JK.033	JK.033	4.63	6.41
a	37.4	51.5	55.3	20.0	5.85	29.2	.148	.172
Mg	3.98	6.88	4.92	3.33	1.94	1.92	0.017	0.016

Soil Results, mg/kg dry wt.

<u>Sample</u>	<u>Ag</u>	<u>As</u>	<u>Ba</u>	<u>Cd</u>	<u>Cr</u>	<u>Cu</u>	<u>Mn</u>	<u>Ni</u>
01603	JK6.32	130	172	3.48	51.2	452	355	47.
01604	JK5.44	79.6	154	8.70	87.9	2400	580	127
01605	JK6.18	95.8	199	7.42	100	2870	554	164
01606	JK5.80	60.6	85.7	4.35	50.6	993	644	105
01607	JK7.76	34.5	95.3	76.1	19.2	174	275	19.
01608	JK6.33	75.3	119	12.4	57.1	1500	645	136

<u>Sample</u>	<u>Pb</u>	<u>Zn</u>	<u>Al</u>	<u>Fe</u>	<u>Ca</u>	<u>Mg</u>
01603	671	4970	24800	49500	14400	6450
01604	3340	19700	8000	136000	68900	4980
01605	4350	21500	10800	130000	51700	5930
01606	8900	12600	6420	140000	86000	4840
01607	11400	84400	5500	14500	15700	4360
01608	3180	19300	10600	131000	73900	5350

Quality Assurance/Quality Control

<u>Sample</u>	<u>Parameter</u>	<u>Accuracy</u> <u>Ave. % Spike Recovery</u>	<u>Precision</u> <u>RPD</u>
01606	As	96	1.0
01606	Ba	100	1.0
01606	Cd	110	13
01606	Cr	104	2.9
01606	Cu	112	---
01606	Mn	113	13
01606	Ni	107	11
01591	Ag	86	1.2
01591	As	100	1.0
01591	Ba	112	1.8
01591	Be	106	1.0
01591	Cd	132	17
01591	Co	100	0
01591	Cr	105	3.8
01591	Cu	140	10
01591	Mn	104	1.9
01591	Ni	116	22
01591	Pb	103	7.8
01591	Se	100	0
01591	V	99	2.0
01591	Zn	132	9.0
01591	Al	104	3.8
01591	Fe	128	2.3
01591	Ca	---	---
01591	Mg	---	---

Serial Dilution Results - % Difference

<u>Sample</u>	<u>Ba</u>	<u>Cr</u>	<u>Cu</u>	<u>Mn</u>	<u>Ni</u>	<u>Pb</u>	<u>Zn</u>	<u>Al</u>	<u>Fe</u>	<u>Ca</u>	<u>Mg</u>
01603	< 1	2.4	1.3	< 1	--	4.1	4.1	< 1	2.3	1.4	1.7
01604	2.0	6.5	2.5	5.3	6.5	5.9	8.4	1.8	3.8	3.6	3.4
01605	< 1	1.2	< 1	2.4	3.7	4.1	6.0	< 1	4.0	1.8	< 1
01606	< 1	1.6	1.1	4.0	1.9	4.6	6.0	< 1	3.2	2.7	1.9
01607	2.0	---	< 1	< 1	---	1.3	10.	< 1	< 1	< 1	< 1
01608	< 1	4.4	2.0	4.4	8.7	4.6	6.1	< 1	2.3	1.0	2.3
01608 DUP	< 1	< 1	2.0	3.9	3.5	4.9	6.2	< 1	3.2	2.1	2.2

Duplicate Results - Relative % Difference

<u>Sample</u>	<u>Ag</u>	<u>As</u>	<u>Ba</u>	<u>Cd</u>	<u>Cr</u>	<u>Cu</u>	<u>Mn</u>	<u>Ni</u>	<u>Pb</u>	<u>Zn</u>	<u>Al</u>	<u>Fe</u>	<u>Ca</u>	<u>Mg</u>
01608	0	5.6	6.7	9.7	3.2	2.0	< 1	5.1	3.5	1.0	0	5.3	< 1	8.0

Aqueous and Solid Laboratory Control Sample Results

Solid

<u>Ag</u>	<u>As</u>	<u>Ba</u>	<u>Cd</u>	<u>Cr</u>	<u>Cu</u>	<u>Mn</u>	<u>Ni</u>	<u>Pb</u>	<u>Zn</u>	<u>Al</u>	<u>Fe</u>	<u>Ca</u>	<u>Mg</u>
82	108	109	108	102	100	97	92	93	107	100	97	97	104

Aqueous

<u>Ag</u>	<u>As</u>	<u>Ba</u>	<u>Be</u>	<u>Cd</u>	<u>Co</u>	<u>Cr</u>	<u>Cu</u>	<u>Mn</u>	<u>Ni</u>	<u>Pb</u>	<u>Se</u>	<u>V</u>	<u>Zn</u>	<u>Al</u>	<u>Fe</u>
85	100	101	108	121	106	108	184	106	108	104	102	103	111	103	111

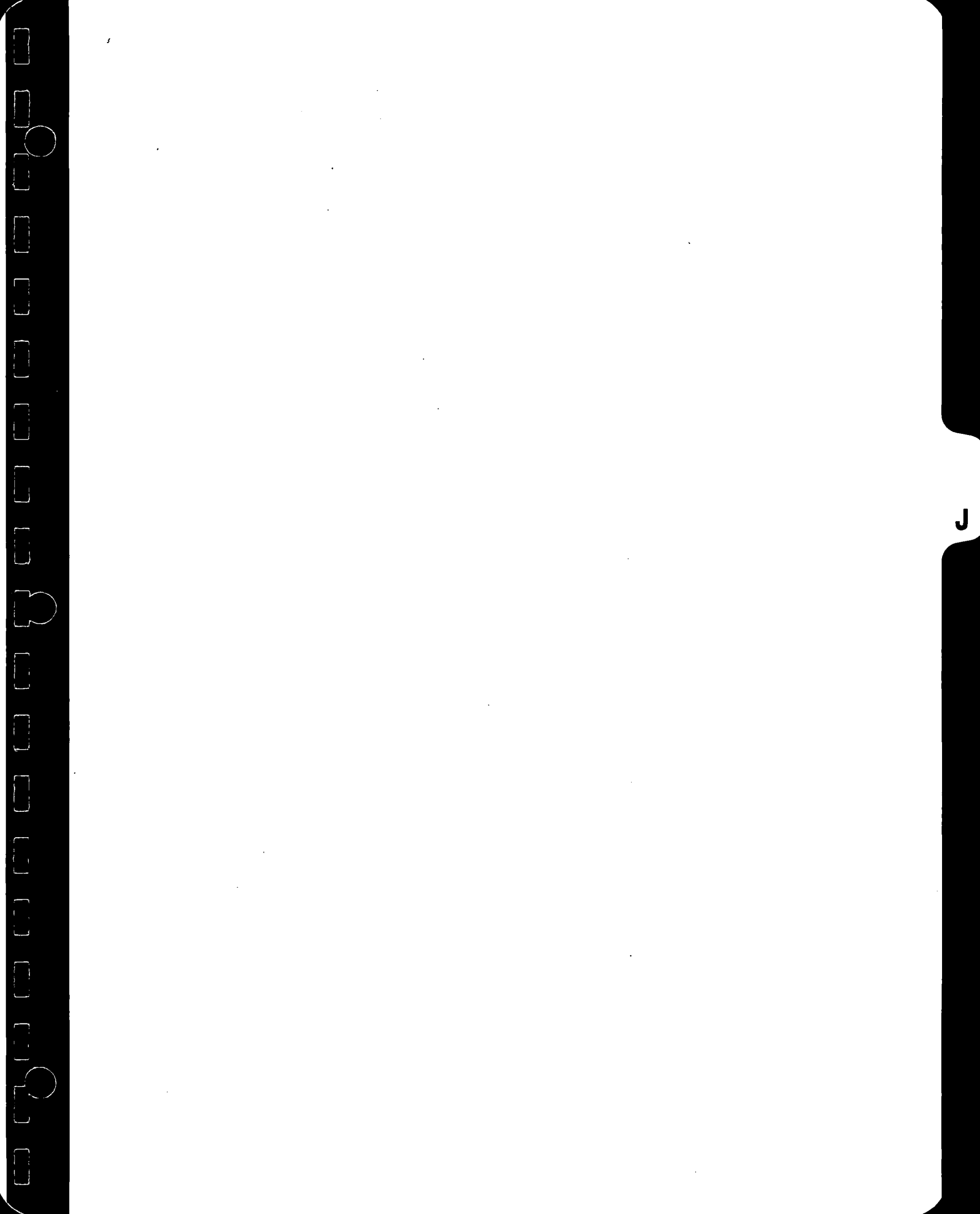
Data Quality Statements

- Elio Goffi and Michael Dowling independently reviewed all data.
- Samples were digested by 3 ESAT persons and analyzed by ICP.
- No predigestion spike recoveries are reported for Al, Ca, Fe, Pb, Mg and Zn since the sample concentration (01606) was greater than 1000 mg/kg. Silver results for the soil samples are J'd due to low predigestion spike recoveries.

Post spike recoveries are reported for these elements.

<u>Al</u>	<u>Ag</u>	<u>Ca</u>	<u>Mg</u>	<u>Pb</u>
100%	101%	101%	102%	105%

- The preparation blank for the water samples contained 35 ppb Cu, 9 ppb Zn, 11 ppb Fe and 43 ppb Ca. Appropriate data qualifiers are used.
- Instrument performance was excellent.



APPENDIX J

LABORATORY RESOURCES, INC. REPORT ON TCLP SAMPLES

TCLP
ANALYTICAL DATA REPORT

WORK ORDER #

E204095

prepared for

ROY F. WESTON, INC.
99 S. BEDFORD ST. SUITE 5
BURLINGTON, MA 01803

PROJECT:

TDD #:01-9203-L2 PCS #:0315

Date Received: 04/03/92

Prepared by

LABORATORY RESOURCES, INC.

 4/24/92
T.F. McCommas, Director Date
Robert LaFerriere, Tech. Lab. Director

Work Order #: E204095
Client: ROY F. WESTON, INC.
Project: TDD #:01-9203-L2 PCS #:0315

TABLE OF CONTENTS

	Page
Title Page	
Table of Contents	
Sample Cross Reference	1
Analysis Request Forms, Chain of Custody Forms, and Additional Communications Documentation	2
Analytical Methodology	4
Laboratory Chronicles	5
Non-Conformance Summary	6
Analytical Results	7
Raw Data	
Metals Calibration Curves and Sample Printouts	10

Last Page: 17

Work Order: E204095T
Client: ROY F. WESTON, INC.
Project: TDD #:01-9203-L2 PCS #:0315

SAMPLE IDENTIFICATION

SAMPLE NUMBER	CLIENT DESIGNATION	DATE SAMPLED	MATRIX
E204095 - 01	#028 QUAD 2+00, 100N #01603	04/01/92	SOLID
E204095 - 02	#032 QUAD 3+50, 100N #01607	04/01/92	SOLID
E204095 - 03	#033 QUAD 4+00, 45S #01608	04/01/92	SOLID

CHAIN OF CUSTODY RECORD

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

Precautionary Measures Against Hidden Hazards in Laboratory Samples

Notice to Laboratory Personnel

Background

Under the authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, Section 311 of the Clean Water Act, and Subtitle I of the Resource Conservation and Recovery Act (RCRA), EPA has been delegated the responsibility to undertake response actions with respect to the release or potential release of oil, petroleum, or hazardous substances that pose a substantial threat to human health or welfare, or the environment. In addition, EPA provides technical assistance to help mitigate endangerment of the public health, welfare or environment during other emergencies and natural disasters.

EPA's successful implementation of these emergency response action responsibilities requires that technical support capabilities be provided in the form of contracted Technical Assistance Teams (TAT) for each EPA Region. The WESTON TAT Contract 68-WO-0036 provides support to EPA Regions I, II, III, IV, ERT - Edison, and Headquarters - Washington, DC.

Hazard Communication

The samples which accompany this notice have been shipped to your laboratory for analysis in accordance with applicable D.O.T. or IATA Regulations and were collected by the WESTON TAT and were tentatively designated by the field response team as either environmental or hazardous material samples.

In general, *Environmental Samples* are collected from streams, farm ponds, small lakes, wells, and off-site soils that are not reasonably expected to be contaminated with hazardous materials. Samples of on-site soils or water, and materials collected from drums, bulk storage tanks, obviously contaminated ponds, impoundments, lagoons, pools, and leachates from hazardous waste sites are considered *Hazardous Samples*. Samples which are obtained from a known radioactive material contamination site or which demonstrate beta or gamma activity greater than three times average background as scanned with a Geiger-Mueller radiation survey meter are considered *Radioactive Samples*.

The samples which accompany this notice have been tentatively classified by the field response team as:

☒ Environmental ☒ Hazardous ☐ Comb. (Envir. & Haz.) ☐ Radioactive

The field team which collected the samples used the following Level(s) of personal protection as designated by EPA and OSHA conventions to provide protection against possible radiological or chemical exposure:

☐ Level A ☐ Level B ☐ Level C ☒ Level D

This information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSHA regulations. The sample classification(s) and Levels of personal protection used by the WESTON TAT are not represented to be, nor are they adequate or applicable in all situations, nor are they intended to serve as substitutes for professional/personal judgement.

This form was prepared by: Paul Killian 04/02/92

Analytical Services TDD No. 01-9203-62 Date 4/1/92 PCS # 0315
TAT Region I

WESTON Office: Burlington MA Phone: 617-229-6430 FAX: 617-272-3619

Laboratory Name: Laboratory Resources, Inc.

Work Order: E204095T
Client: ROY F. WESTON, INC.
Project: TDD #:01-9203-L2 PCS #:0315

ANALYTICAL METHODOLOGY

ANALYSIS	METHOD	REFERENCE	EDITION
ARSENIC	EPA 6010	SW 846	3rd
	EPA 3010	SW 846	3rd
BARIUM	EPA 6010	SW 846	3rd
	EPA 3010	SW 846	3rd
CADMIUM	EPA 6010	SW 846	3rd
	EPA 3010	SW 846	3rd
CHROMIUM	EPA 6010	SW 846	3rd
	EPA 3010	SW 846	3rd
LEAD	EPA 6010	SW 846	3rd
	EPA 3010	SW 846	3rd
MERCURY	EPA 7470	SW 846	3rd
	EPA 3010	SW 846	3rd
SELENIUM	EPA 6010	SW 846	3rd
	EPA 3010	SW 846	3rd
SILVER	EPA 6010	SW 846	3rd
	EPA 3010	SW 846	3rd
NICKEL	EPA 6010	SW 846	3rd
	EPA 3010	SW 846	3rd
ZINC	EPA 6010	SW 846	3rd
	EPA 3010	SW 846	3rd
TCLP EXTRACTION	EPA 1311	SW 846	3rd

LABORATORY RESOURCES, INC.

LABORATORY CHRONICLES

SAMPLE NUMBER

E204095

01

02

03

RECEIVED & REFRIGERATED DATE:

4/3/92

4/3/92

4/3/92

METALS EXTRACTION DATE:

4/7/92

4/7/92

4/7/92

ANALYSIS DATE:

ARSENIC

4/10/92

4/10/92

BARIUM

4/10/92

4/10/92

CADMIUM

4/10/92

4/10/92

CHROMIUM

4/10/92

4/10/92

4/10/92

LEAD

4/10/92

4/10/92

4/10/92

MERCURY

4/10/92

4/10/92

SELENIUM

4/10/92

4/10/92

SILVER

4/10/92

4/10/92

NICKEL

4/10/92

4/10/92

4/10/92

ZINC

4/10/92

4/10/92

4/10/92

INORGANIC SUPERVISOR
REVIEW & APPROVAL

RL

RL

RL

Work Order: E204095T
Client: ROY F. WESTON, INC.
Project: TDD #:01-9203-L2 PCS #:0315

INORGANIC

NON-CONFORMANCE SUMMARY

THERE WERE NO NON-CONFORMANCES ASSOCIATED WITH THESE SAMPLES.

T.F. McCommas, Director

ANALYTICAL RESULTS
TOXICITY CHARACTERISTICS LEACHING PROCEDURE

Page: 2

LAB ID: E204095-01

CLIENT ID: #028 QUAD 2+00,100N #01603

DATE COLLECTED: 04/01/92

CLIENT PROJECT: TDD #:01-9203-L2 PCS #:0315

PARAMETER	METHOD	DATE OF ANALYSIS	UNADJUSTED RESULT (mg/L)	ADJUSTED RESULT (mg/L)	PQL (mg/L)	REGULATORY LEVEL (mg/L)
TCLP METALS EXTRACTION	1311	04/07/92				
CHROMIUM	6010	04/10/92	ND	ND	0.050	5.
NICKEL	6010	04/10/92	0.17	0.19	0.050	
LEAD	6010	04/10/92	0.77	0.71	0.050	5.
ZINC	6010	04/10/92	56	49	0.20	

METHOD REFERENCE: SW-846, 3rd EDITION.

PQL: PRACTICAL QUANTIFICATION LIMIT.

THE ADJUSTED RESULT ACCOUNTS FOR MATRIX SPIKE RECOVERIES PER 40 CFR, PART 261.

TCLP AND ZERO HEADSPACE EXTRACTION PERFORMED AS PRESCRIBED IN FEDERAL REGISTER
40 CFR PART 261, MARCH 29, 1990.

ANALYTICAL RESULTS
TOXICITY CHARACTERISTICS LEACHING PROCEDURE

Page: 3

LAB ID: E204095-02

CLIENT ID: #032 QUAD 3+50,100N #01607

DATE COLLECTED: 04/01/92

CLIENT PROJECT: TDD #:01-9203-L2 PCS #:0315

PARAMETER	METHOD	DATE OF ANALYSIS	UNADJUSTED RESULT (mg/L)	ADJUSTED RESULT (mg/L)	PQL (mg/L)	REGULATORY LEVEL (mg/L)
TCLP METALS EXTRACTION	1311	04/07/92				
NICKEL	6010	04/10/92	ND	ND	0.050	
ARSENIC	6010	04/10/92	1.0	1.0	0.2	5.0
BARIUM	6010	04/10/92	0.90	0.92	0.005	100.0
CADMIUM	6010	04/10/92	0.40	0.46	0.005	1.0
CHROMIUM	6010	04/10/92	ND	ND	0.05	5.0
LEAD	6010	04/10/92	29	27	0.05	5.0
MERCURY	7470	04/10/92	ND	ND	0.0005	0.2
SELENIUM	6010	04/10/92	0.5	0.5	0.2	1.0
SILVER	6010	04/10/92	ND	ND	0.05	5.0
ZINC	6010	04/10/92	690	609	2.00	

METHOD REFERENCE: SW-846, 3rd EDITION.

PQL: PRACTICAL QUANTIFICATION LIMIT.

THE ADJUSTED RESULT ACCOUNTS FOR MATRIX SPIKE RECOVERIES PER 40 CFR, PART 261.

TCLP AND ZERO HEADSPACE EXTRACTION PERFORMED AS PRESCRIBED IN FEDERAL REGISTER
40 CFR PART 261, MARCH 29, 1990.

ANALYTICAL RESULTS
TOXICITY CHARACTERISTICS LEACHING PROCEDURE

Page: 4

LAB ID: E204095-03

CLIENT ID: #033 QUAD 4+00, 45S #01608

DATE COLLECTED: 04/01/92

CLIENT PROJECT: TDD #:01-9203-L2 PCS #:0315

PARAMETER	METHOD	DATE OF ANALYSIS	UNADJUSTED RESULT (mg/L)	ADJUSTED RESULT (mg/L)	PQL (mg/L)	REGULATORY LEVEL (mg/L)
TCLP METALS EXTRACTION	1311	04/07/92				
NICKEL	6010	04/10/92	0.30	0.34	0.050	
ARSENIC	6010	04/10/92	0.4	0.4	0.2	5.0
BARIUM	6010	04/10/92	0.23	0.24	0.005	100.0
CADMIUM	6010	04/10/92	0.08	0.09	0.005	1.0
CHROMIUM	6010	04/10/92	ND	ND	0.05	5.0
LEAD	6010	04/10/92	0.46	0.43	0.05	5.0
MERCURY	7470	04/10/92	ND	ND	0.0005	0.2
SELENIUM	6010	04/10/92	0.3	0.3	0.2	1.0
SILVER	6010	04/10/92	0.27	0.24	0.05	5.0
ZINC	6010	04/10/92	82	72	2.00	

METHOD REFERENCE: SW-846, 3rd EDITION.

PQL: PRACTICAL QUANTIFICATION LIMIT.

THE ADJUSTED RESULT ACCOUNTS FOR MATRIX SPIKE RECOVERIES PER 40 CFR, PART 261.

TCLP AND ZERO HEADSPACE EXTRACTION PERFORMED AS PRESCRIBED IN FEDERAL REGISTER
40 CFR PART 261, MARCH 29, 1990.

DUPLICATE & SPIKE
QC DATA

SAMPLE# Spike Blank

DATE 4/10/92

ANALYTE	SAMPLE CONC.	ADDED CONC. SPIKE	MATRIX SPIKE RESULTS	% RECOVERY	ADDED CONC. DUPLICATE	MATRIX DUPLICATE RESULTS	% RECOVERY	%RPD
As	ND	0.70	0.69	98.5	0.70	0.70	100	1.5
Ba	ND	0.50	0.48	96.0	0.50	0.48	96.0	0
Cd	ND	0.50	0.49	98.0	0.50	0.49	98.0	0
Cr	ND	0.50	0.49	98.0	0.50	0.50	100.0	2.0
Pb	ND	0.60	0.66	110.0	0.60	0.70	116.7	5.9
Hg	ND	0.002	0.00153	76.5	0.0020	0.00151	75.5	1.3
Se	ND	0.60	0.61	101.7	0.60	0.60	100.0	1.7
Ag	ND	2.0	2.1	105.0	2.0	2.3	115.0	9.1

ASSOCIATED SAMPLES

095	1A		
095	2A		
095	3A		

MATRIX SPIKE BIAS CORRECTION DATA

ATRIX TYPE Solid
SAMPLE ID 095-2A
DATE 4/10/92

PARAMETER	SPIKE ADDED	SAMPLE CONC.	MS CONC.	% R
ARSENIC	10.0	0.97	11.2	102.3
BARIUM	45.0	0.83	45.5	99.3
CADMIUM	2.0	0.40	2.28	94.0
CHROMIUM	10.0	ND	9.78	97.8
LEAD	10.0	26.5	37.3	108.0
MERCURY	0.005	ND	0.005	100.0
SELENIUM	2.0	0.50	2.70	110.0
SILVER	0.500	ND	0.577	115.4
Nickel	1.00	ND	0.89	89.0
Zinc	15.0	627	644	113.3

ASSOCIATED SAMPLES

[illegible]

Protocol: systest Rev: 1.201 Time: 15:43:05 05 Mar 1992
 Folder: systest Seq: 42 Print: On
 User: Batch: Id: StdRep3 Cup: 8 Gas: .30 LPM
 State: Idle Macro SYSTEST 99 : F3 Print Xait: Off Autosampler: On

CALIBRATION: Line Calibration

Line	Hy	Conc.	Calc.	Dev.	Accepted
S1	.0000	.0704	.0704		Linear
S2	.5000	.5238	.0238		Quadratic
S3	1.000	.9418	-.0530		WtdLinear
S4	2.000	1.931	-.0693		Accept
S5	5.000	5.834	.8341		Every
S6					
	.00000	r	.999527		
	5.3703e-05	C	-1.0563e-01		

Mean: 3272 ±850

Relative Absorbance

Line	Mean	±850	2981	2963
S1	3272	15.88	3872	3872
S2	11701	3.24	11894	11894
S3	19459	3.97	20115	19656
S4	37858	1.43	38276	38852
S5	95935	0.60	95854	95994
S6				

New cal coefficients stored 8 123 2 5

Page 7

13:34:49 08 Apr 1992

Folder: LOW2
Protocol: LOW-HG

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 095 2A SP Seq: 320 13:34:49 08 Apr 1992								
TCLP								
Hg	.4053	PPB	.0000	.4053				
*** Sample ID: 095 2A Seq: 321 13:37:15 08 Apr 1992								
TCLP								
Hg	.1277	PPB	.0000	.1277				
*** Check Standard: 2 Seq: 322 13:39:40 08 Apr 1992								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		94.72	1.094	2.000	PPB	.0000		
*** Update Intercept Seq: 323 13:42:09 08 Apr 1992								
			Corr.	Avg.	SD/RSD	Old		
Hg	.0000	PPB	.0711	-.0633	.0000	.1969		
*** Update Slope Seq: 324 13:44:40 08 Apr 1992								
			% Corr.	Avg.	SD/RSD	Old		
Hg	5.000	PPB	10.22	4.537	.0000	4.042		
*** Sample ID: 095 3A Seq: 325 13:47:10 08 Apr 1992								
TCLP								
Hg	-.0593	PPB	.0000	-.0593				
*** Sample ID: 124 1A SP Seq: 326 13:49:33 08 Apr 1992								
EPTOX								
Hg	1.528	PPB	.0000	1.528				
*** Sample ID: 124 1A SP Seq: 327 13:51:56 08 Apr 1992								
EPTOX								
Hg	1.514	PPB	.0000	1.514				
*** Sample ID: 124 1A Seq: 328 13:54:20 08 Apr 1992								
EPTOX								
Hg	-.0451	PPB	.0000	-.0451				
*** Check Standard: 2 Seq: 329 13:56:45 08 Apr 1992								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		96.86	1.937	2.000	PPB	.0000		
*** Sample ID: 140 1C Seq: 330 13:59:16 08 Apr 1992								
Hg	19.66	PPB	.0000	19.66				

CALIBRATION - Hg

15:09:28 05 Mar 1992

Folder: systest
Protocol: systest

Page 1

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 27	15:09:28 05 Mar 1992			
Hg	.0000	ppb	3872					
			Ave. Int. =	3872	S. D. =	0		
*** Standard: 1 Rep: 2				Seq: 28	15:11:49 05 Mar 1992			
Hg	.0000	ppb	2981					
			Ave. Int. =	2981	S. D. =	0		
*** Standard: 1 Rep: 3				Seq: 29	15:14:10 05 Mar 1992			
Hg	.0000	ppb	2963					
			Ave. Int. =	2963	S. D. =	0		
*** Standard: 2 Rep: 1				Seq: 30	15:16:31 05 Mar 1992			
Hg	.5000	ppb	11984					
			Ave. Int. =	11984	S. D. =	0		
*** Standard: 2 Rep: 2				Seq: 31	15:18:53 05 Mar 1992			
Hg	.5000	ppb	11850					
			Ave. Int. =	11850	S. D. =	0		
*** Standard: 2 Rep: 3				Seq: 32	15:21:14 05 Mar 1992			
Hg	.5000	ppb	11271					
			Ave. Int. =	11271	S. D. =	0		
*** Standard: 3 Rep: 1				Seq: 33	15:23:35 05 Mar 1992			
Hg	1.000	ppb	20115					
			Ave. Int. =	20115	S. D. =	0		
*** Standard: 3 Rep: 2				Seq: 34	15:25:56 05 Mar 1992			

Hg 1.000 ppb 19656
Ave. Int. = 19656 S. D. = 0

*** Standard: 3 Rep: 3 Seq: 35 15:28:17 05 Mar 1992

Hg 1.000 ppb 18607
Ave. Int. = 18607 S. D. = 0

15:30:39 05 Mar 1992 Folder: systest
Protocol: systest Page 2

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 4 Rep: 1 Seq: 36 15:30:39 05 Mar 1992								
Hg	2.000	ppb	38276					
Ave. Int. =				38276	S. D. =	0		
*** Standard: 4 Rep: 2 Seq: 37 15:33:03 05 Mar 1992								
Hg	2.000	ppb	38052					
Ave. Int. =				38052	S. D. =	0		
*** Standard: 4 Rep: 3 Seq: 38 15:35:27 05 Mar 1992								
Hg	2.000	ppb	37247					
Ave. Int. =				37247	S. D. =	0		
*** Standard: 5 Rep: 1 Seq: 39 15:37:52 05 Mar 1992								
Hg	5.000	ppb	95864					
Ave. Int. =				95864	S. D. =	0		
*** Standard: 5 Rep: 2 Seq: 40 15:40:24 05 Mar 1992								
Hg	5.000	ppb	95994					
Ave. Int. =				95994	S. D. =	0		
*** Standard: 5 Rep: 3 Seq: 41 15:42:56 05 Mar 1992								
Hg	5.000	ppb	94808					
Ave. Int. =				94808	S. D. =	0		

09:10:34 10 Apr 1992

Folder: W040992
Protocol: WATER

Page 3

Line	Conc.	Units	SD/RSD	1	2	3	4	5
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*** Sample ID: SPIKE BLK

Seq: 86

09:10:34 10 Apr 1992

Ag1	2.11	PPM	.011	2.11	2.12	2.10
As2	.691	PPM	.079	.769	.611	.692
Ba1	.475	PPM	.000	.475	.475	.475
Cd1	.493	PPM	.010	.487	.487	.504
Cr4	.488	PPM	.006	.481	.492	.491
Ni3	.496	PPM	.006	.503	.491	.495
Pb1	.662	PPM	.021	.657	.644	.685
Se1	.610	PPM	.148	.763	.468	.600
Zn3	.620	PPM	.012	.612	.615	.633

*** Sample ID: SPIKE BLK

Seq: 87

09:15:15 10 Apr 1992

Ag1	2.29	PPM	.286	2.33	1.98	2.55
As2	.703	PPM	.051	.664	.684	.761
Ba1	.478	PPM	.004	.478	.482	.474
Cd1	.491	PPM	.007	.485	.489	.498
Cr4	.496	PPM	.004	.493	.500	.496
Ni3	.539	PPM	.014	.533	.556	.529
Pb1	.700	PPM	.022	.710	.674	.716
Se1	.600	PPM	.120	.733	.503	.563
Zn3	.558	PPM	.008	.548	.561	.564

08:56:31 10 Apr 1992

Folder: W040992
Protocol: WATER

Page 2

Line	Conc.	Units	SD/RSD	1	2	3	4	5
------	-------	-------	--------	---	---	---	---	---

*** Sample ID: 095-2A	Seq: 82	08:56:31 10 Apr 1992						
Ag1 .010 PPM	.007	.018	.004	.007				
As2 .966 PPM	.035	1.00	.937	.958				
Ba1 .826 PPM	.006	.819	.827	.830				
Cd1 .397 PPM	.008	.393	.394	.406				
Cr4 .003 PPM	.003	.004	.000	.005				
Ni3 .043 PPM	.006	.043	.050	.037				
Pb1 26.5 PPM	.466	26.0	26.5	26.9				
Se1 .477 PPM	.082	.561	.398	.471				
Zn3 627. PPM	12.6	640.	626.	615.				

*** Sample ID: 095-1A	Seq: 83	09:01:12 10 Apr 1992						
Ag1 .359 PPM	.011	.369	.362	.348				
As2 .326 PPM	.133	.476	.281	.222				
Ba1 .325 PPM	.003	.321	.327	.327				
Cd1 .043 PPM	.001	.043	.044	.043				
Cr4 .008 PPM	.001	.007	.007	.010				
Ni3 .153 PPM	.012	.150	.166	.142				
Pb1 .704 PPM	.012	.703	.693	.717				
Se1 .182 PPM	.048	.218	.201	.127				
Zn3 50.9 PPM	.544	51.2	51.3	50.3				

*** Peak	Seq: 84	09:02:00 10 Apr 1992
X = 105	Y = 120	Intensity = 55929

*** Sample ID: 095-3A	Seq: 85	09:05:52 10 Apr 1992						
Ag1 .247 PPM	.014	.241	.237	.262				
As2 .385 PPM	.005	.383	.391	.383				
Ba1 .214 PPM	.001	.214	.212	.214				
Cd1 .075 PPM	.001	.076	.076	.074				
Cr4 .012 PPM	.003	.014	.009	.012				
Ni3 .272 PPM	.006	.273	.266	.278				
Pb1 .416 PPM	.006	.423	.415	.411				
Se1 .295 PPM	.127	.441	.237	.206				
Zn3 74.2 PPM	.345	74.0	73.9	74.5				

08:38:36 10 Apr 1992

Folder: W040992
Protocol: WATER

Page 1

Line	Conc.	Units	SD/RSD	1	2	3	4	5
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*** Peak

Seq: 78

08:38:36 10 Apr 1992

X = 106

Y = 120

Intensity = 56008

*** Sample ID: DIG BLK

Seq: 79

08:42:28 10 Apr 1992

Ag1	-.010	PPM	.005	-.007	-.009	-.016
As2	.070	PPM	.021	.072	.048	.089
Ba1	-.001	PPM	.001	-.001	-.000	-.000
Cd1	-.002	PPM	.001	-.001	-.003	-.001
Cr4	-.005	PPM	.001	-.004	-.006	-.006
Ni3	-.004	PPM	.019	.018	-.013	-.016
Pb1	-.017	PPM	.014	-.034	-.008	-.009
Se1	-.025	PPM	.032	-.042	.011	-.045
Zn3	-.001	PPM	.001	-.001	-.001	.000

*** Sample ID: 095-2ABIAS

Seq: 80

08:47:09 10 Apr 1992

Ag1	.555	PPM	.048	.516	.540	.600
As2	9.77	PPM	.281	9.46	10.0	9.85
Ba1	45.4	PPM	.200	45.3	45.6	45.2
Cd1	2.26	PPM	.007	2.25	2.26	2.25
Cr4	9.72	PPM	.081	9.63	9.77	9.77
Ni3	.867	PPM	.012	.857	.864	.881
Pb1	36.5	PPM	.090	36.3	36.6	36.4
Se1	2.20	PPM	.062	2.22	2.13	2.25
Zn3	624.	PPM	2.57	621.	625.	625.

Reperon Jr.
4/10/92

*** Sample ID: 095-2ABIAS

Seq: 81

08:51:50 10 Apr 1992

Ag1	.577	PPM	.093	.532	.684	.516
As2	11.2	PPM	.328	11.0	11.0	11.6
Ba1	45.5	PPM	.585	45.1	46.2	45.3
Cd1	2.28	PPM	.017	2.27	2.30	2.28
Cr4	9.78	PPM	.064	9.79	9.72	9.85
Ni3	.886	PPM	.018	.906	.872	.878
Pb1	37.3	PPM	.551	36.6	37.6	37.6
Se1	2.70	PPM	.055	2.74	2.64	2.73
Zn3	644.	PPM	4.90	650.	642.	642.

Line	Conc.	Units	SD/RSD	1	2	3	4	5
------	-------	-------	--------	---	---	---	---	---

*** Check Standard: 2

Seq: 77

08:33:44 10 Apr 1992

Line	Flag	%Rev.	Found	True	Units	SD/RSD
Ag1		106.	1.06	1.00	PPM	.005
As2		112.	1.12	1.00	PPM	.078
Ba1		104.	1.04	1.00	PPM	.001
Cd1		103.	1.03	1.00	PPM	.008
Cr4		105.	1.05	1.00	PPM	.016
Ni3		101.	1.01	1.00	PPM	.038
Pb1		109.	1.09	1.00	PPM	.003
Se1		97.4	.974	1.00	PPM	.118
Zn3		104.	1.04	1.00	PPM	.038

Line	Conc.	Units	SD/RSD	1	2	3	4	5
------	-------	-------	--------	---	---	---	---	---

*** Update Slope

Seq: 76

08:28:56 10 Apr 1992

			% Corr.	Avg.	SD/RSD	Old
Ag1	3.00	PPM	75.9	1.71	.013	1.71
As2	10.0	PPM	71.9	5.82	.303	5.82
Ba1	3.00	PPM	88.6	1.59	.022	1.59
Cd1	3.00	PPM	54.4	1.94	.028	1.94
Cr4	3.00	PPM	85.5	1.62	.026	1.62
Ni3	3.00	PPM	77.0	1.69	.034	1.69
Pb1	10.0	PPM	54.0	6.49	.125	6.49
Se1	5.00	PPM	71.1	2.92	.136	2.92
Zn3	3.00	PPM	63.3	1.84	.074	1.84

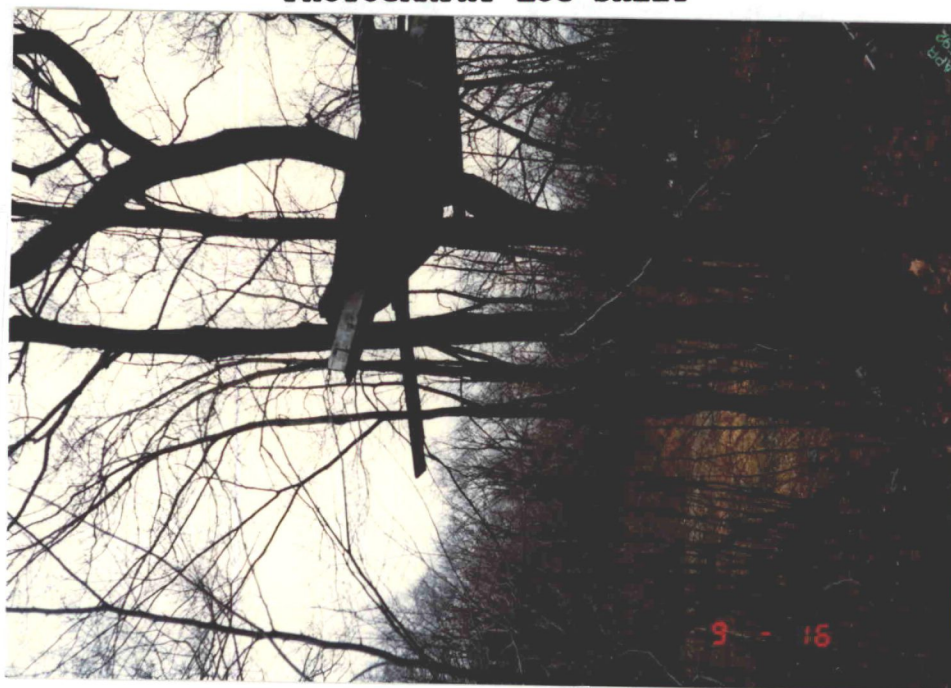
K

APPENDIX K

PHOTODOCUMENTATION LOG

PHOTOGRAPHY LOG SHEET

TOP



SCENE: Tree house on western ridge of site.

SITE NAME: HARCO PROPERTY

LOCATION: Wilton, Connecticut

FRAME NUMBER: 1 DATE: 03/31/92

TIME: 0916

SKY CONDITION: Cloudy

PHOTO BY: Paul Groulx

WITNESSES:

CAMERA: Minolta

SETTING: Automatic

FILM TYPE: 35mm

FILM ROLL: 732699



SCENE: Standing water on site near grid control point EN 2.

SITE NAME: HARCO PROPERTY

LOCATION: Wilton, Connecticut

FRAME NUMBER: 2 DATE: 03/31/92

TIME: 0918

SKY CONDITION: Cloudy

PHOTO BY: Paul Groulx

WITNESSES:

CAMERA: Minolta

SETTING: Automatic

FILM TYPE: 35mm

FILM ROLL: 732699

PHOTOGRAPHY LOG SHEET



SCENE: Fresh bike tracks in dirt at northern end of site.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 3 DATE: 03/31/92 TIME: 0925 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: /
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699



SCENE: Brook discharge on roadway by northend of site.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 4 DATE: 03/31/92 TIME: 0931 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: /
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

PHOTOGRAPHY LOG SHEET

TOP



SCENE: Water by Station 3+50, 00; flowing northeasternly off site.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 5 DATE: 03/31/92 TIME: 0935 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: /
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699



SCENE: Wetlands abutting east side of clearing. Note brown color.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 6 DATE: 03/31/92 TIME: 0940 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: /
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

PHOTOGRAPHY LOG SHEET



SCENE: Closeup of abutting wetlands. Note brown discoloration.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 7 DATE: 03/31/92 TIME: 0940 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES:
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

TOP



SCENE: All-Terrain-Vehicle tracks in roadway at southern end of site.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 8 DATE: 03/31/92 TIME: 0946 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES:
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

PHOTOGRAPHY LOG SHEET

TOP



SCENE: Stream discharge 50 feet east of Station SW-001.
 SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
 FRAME NUMBER: 9 DATE: 03/31/92 TIME: 0952 SKY CONDITION: Cloudy
 PHOTO BY: Paul Groulx WITNESSES: /
 CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699



SCENE: Looking at marsh on northwest corner of site, from Machala house.
 SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
 FRAME NUMBER: 10 DATE: 04/01/92 TIME: 0829 SKY CONDITION: Cloudy
 PHOTO BY: Paul Groulx WITNESSES: /
 CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

PHOTOGRAPHY LOG SHEET

TOP



SCENE: Posted "No Trespassing" sign, by marsh by Machala house.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 11 DATE: 04/01/92 TIME: 0832 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: /
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

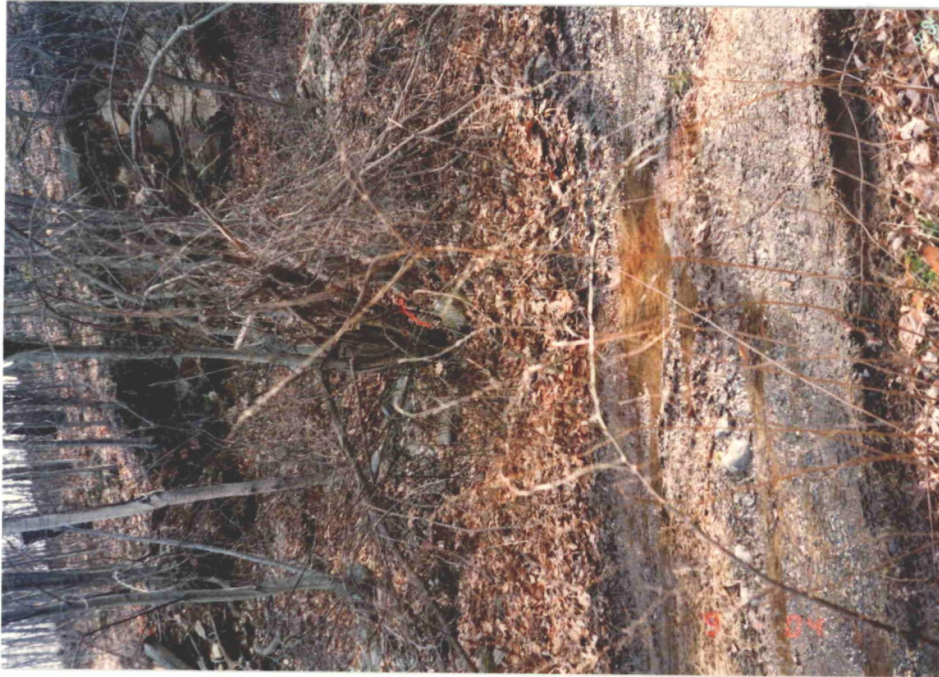
TOP



SCENE: Sample Station SB-001, rockface behind Harco house.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 12 DATE: 04/01/92 TIME: 0854 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: /
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

PHOTOGRAPHY LOG SHEET

TOP



SCENE: Sampling Station SB-002, 50 feet below chain on access road.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 13 DATE: 04/01/92 TIME: 0904 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: /
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

TOP



SCENE: Sampling Station SW-001, stream surface water at northeast corner
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 14 DATE: 04/01/92 TIME: 0942 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: /
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

PHOTOGRAPHY LOG SHEET



SCENE: Sampling Station SW-003, Surface water in Marsh by 4+40, 200N.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 15 DATE: 04/01/92 TIME: 1224 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: ,
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

TOP



SCENE: Sampling Station SW-002, by Station 3+50, 50N, looking west.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 16 DATE: 04/01/92 TIME: 1237 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES: ,
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

PHOTOGRAPHY LOG SHEET



SCENE: Sampling Station SW-004, by Station 2+00, 150N.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 17 DATE: 04/01/92 TIME: 1241 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES:
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699



SCENE: View of SLAG material, 20 feet northwest of Station 4+00, 100N.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 18 DATE: 04/01/92 TIME: 1243 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES:
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699

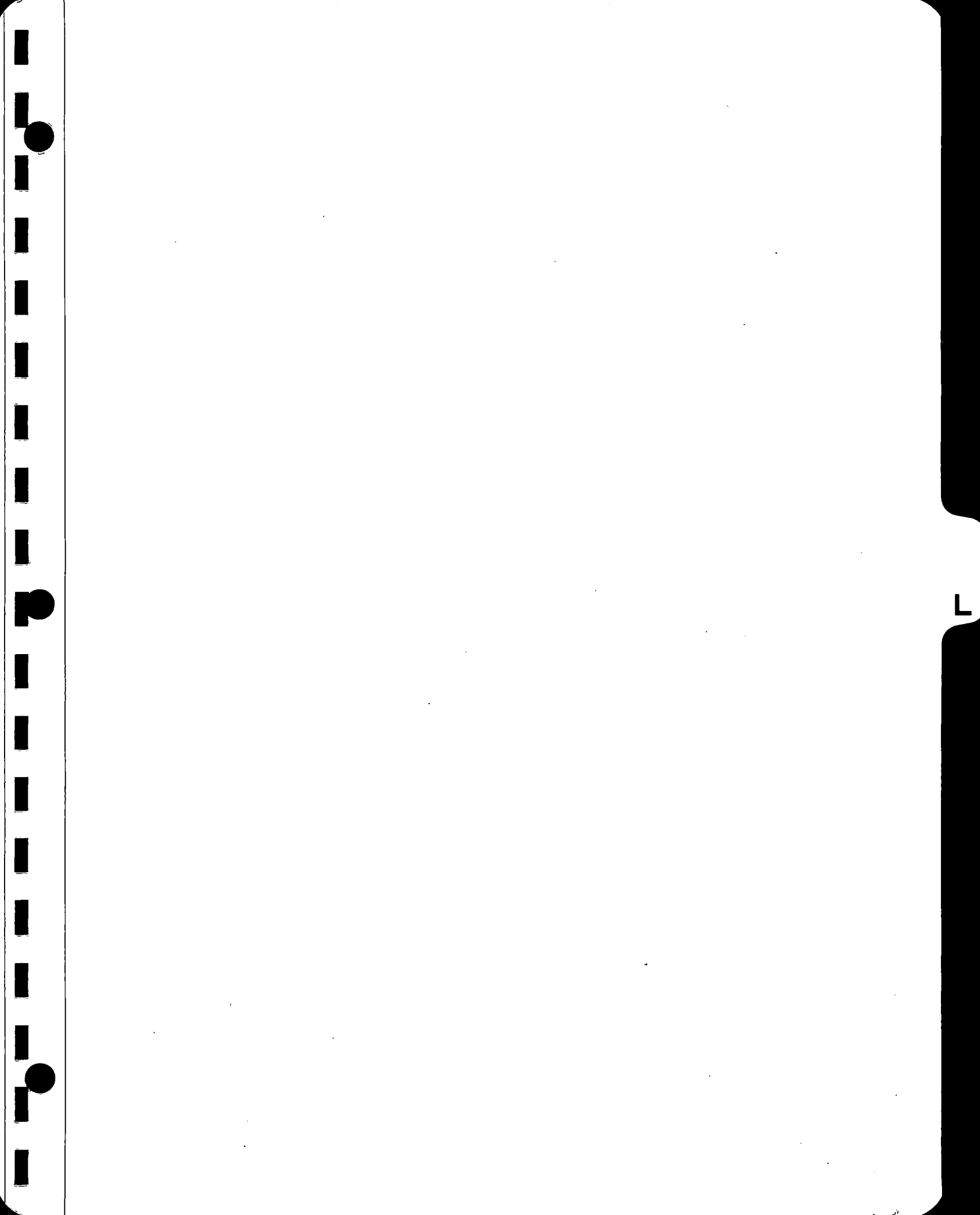
PHOTOGRAPHY LOG SHEET



SCENE: View of Red SLUDGE by Station 3+00, 50N.
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 19 DATE: 04/01/92 TIME: 1245 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES:
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699


RITZ CAMERA

SCENE: Negatives
SITE NAME: HARCO PROPERTY LOCATION: Wilton, Connecticut
FRAME NUMBER: 0 DATE: 04/01/92 TIME: 0000 SKY CONDITION: Cloudy
PHOTO BY: Paul Groulx WITNESSES:
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35mm FILM ROLL: 732699



APPENDIX L

NERL ANALYTICAL REPORT ON SEPTEMBER 1990 SAMPLES

CHAIN OF CUSTODY RECORD

JFK Federal Building, Rm. 2203
Boston, Massachusetts 02203

PROJ. NO.		PROJECT NAME				NO. OF CON- TAINERS	<div style="text-align: center;"> <p>VOA-8240 Metals Total/CN BMA-8270</p> </div>						<div style="text-align: center;"> <p>All Samples R.d - In R-2, R-3 R-6</p> <p>REMARKS FA Project # 900244</p> </div>				
SAMPLERS: (Signature) <i>Gary Rigney</i>																	
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION												
001	9/24/90	0640		X	WELL-BLANKS	5	3			2				#80823 V-3x40m, B-2x1L			
002	9/25/90	1150		X	Drum	3	1	1		1				#80824 V-1x40m B-1x40m M-1x8oz			
003	9/25/90	1230		X	Soil - nr Truck	4	1	1	1	1				#80825 V-1x40m B-1x8oz M-1x4oz G-1x8oz			
004	9/25/90	1240		X	Soil - nr Woods	4	1	1	1	1				#80826 V-1x40 B-1x8 M-1x4 C-1x8			
005	9/25/90	1250		X	Soil - on road - gray	4	1	1	1	1				#80827 V-1x40 B-1x8 M-1x4 C-1x8			
006	9/25/90	1305		X	Soil - on road - HNU	4	1	1	1	1				#80828 V-1x40 B-1x8 M-1x4 C-1x8			
007	9/25/90	1315		X	Soil - on road - nr puddle	4	1	1	1	1				#80829 V-1x40 B-1x8 M-1x4 C-1x8			
008	9/25/90	1350		X	Water - Standing	8	3	1	2	2				#80830 V-3x40m B-2x1L M-1x8oz G-2x1L			
009	9/25/90	1340		X	Water - Stream	8	3	1	2	2				#80963 V-3x40 B-2x1 M-1x8 G-2x1			
Relinquished by: (Signature) <i>Gary Rigney</i>						Date / Time 9/26/90 1130		Received by: (Signature)				Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
Relinquished by: (Signature)						Date / Time		Received by: (Signature)				Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
Relinquished by: (Signature)						Date / Time		Received for Laboratory by: (Signature) <i>[Signature]</i>				Date / Time 9/24/90 11:30		Remarks			

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
Environmental Services Division
60 Westview Street, Lexington, MA 02173-3185
PN: 900245

MEMORANDUM

DATE: October 10, 1990

SUBJ: Harco Property

FROM: Kathleen M. Polgar
Chemist

TO: Albert Pratt
Environmental Studies Section

THRU: Dr. William J. Andrade
Chief, Chemistry Section

Analytical Procedure: Total cyanides were determined in 5 samples of soil and 2 samples of water.

Method followed in analysis:

Method 335.2 CLP-M* "Method for Total Cyanide Analysis in Water" and "Method for Total Cyanide Analysis in Soil/Sediment, Inorganic Analysis SOW 7/87, REV. 12/87."

Reference Book: CN analysis Book IX

Samples Received by Laboratory: 9/26/90

Samples Analyzed by Laboratory: 10/5/90

Results:

Sample #	STA 3 80825	STA 4 80826	STA 5 ^{off site} 80827	STA 6 80828	STA 7 80829
soils	Road		ug/g sample	Road	Road
Total cyanides spk	K1 99%	K1	K1	K1	K1
Sample #	STA 8 80830	STA 9 80963			
waters	Puddle	River			
Total cyanides mg/l	K.01	K.01			
spk		98%			

File Name: 900245so.cn

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
Environmental Services Division
60 Westview Street, Lexington, MA 02173-3185

PN:: 900245

MEMORANDUM

DATE: October 23, 1990

SUBJ: Harco Property

FROM: Michael E. Dowling
Chemist

TO: Mary Ellen Stanton
Enforcement & Prevention Section

THRU: Dr. William J. Andrade
Chief, Chemistry Section *WJA*
10/25/90

Analytical Procedure

Samples 80830 and 80963 were analyzed for arsenic and selenium. Methods 206.2 (As) and 270.2 (Se) as stated in "The U.S. EPA Contract Laboratory Program, SOW 788, Revised 7/88" were followed for the analysis.

Date Samples Received by Laboratory: 9/26/90

Date Samples Analyzed by Laboratory: 10/17 - 10/18/90

Reference Book: Metals 79

File Name: 900245wa.aa

Results (ug/l)

Arsenic

Selenium

Sta 8 Riddle
80830

K10

K5

Sta 9 River
80963

K10

K5

Matrix Spike Results

Accuracy

Sample Parameter

%Recovery

river

80963

As

84

river
Riddle

80963

Se

<75

Note: Due to the fact that only 200ml sample volume was submitted for analysis, only a minimum amount of QC could be performed. This volume is insufficient to perform graphite furnace, ICP and mercury analyses.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173

MEMORANDUM

PN: 900245

DATE: October 31, 1990

SUBJ: HARCO Property

FROM: Elio Goffi
Chemist

TO: Mary Ellen Stanton
Response and Prevention Section

THRU: Dr. William J. Andrade
Chief, Chemistry Section

WJ Andrade

Two water samples and six soil samples were submitted for chemical analysis. The water samples were not of sufficient volume to permit full Q.C. analysis; sample numbers 80963 and 80830.

The soil samples were completely inhomogeneous. Samples within the jars submitted were different in texture, color, composition, etc.; sample numbers 80824 - 80829.

Date Samples Received by Laboratory: 9/20/90

Date Samples Analyzed by Laboratory: 10/26/90

Documentation: ICAP Methods Book #81
Opened 6/25/90

Analytical Method: Digestion for water and soil samples was used as described in the U.S. EPA Contract Laboratory Program - document number 1LT701.0 - Exhibit D.

The samples for inorganic analysis were analyzed by inductively coupled plasma-atomic emission as described in the above document (1LT701.0 - Exhibit D).

Results - MG/Kg

Sample #	Zn	Cd	Pb	Ni	Ba	Cr	Cu	Ag	Sn
0963 river	9.07	K.008	0.981	K.033	0.142	K.017	K.042	K.033	K.012
30963 MS	125	97	110	97	96	96	101	94	
% Recovery									
30830 rubble	0.751	K.004	0.181	0.024	0.274	0.036	0.019	K.016	K.020
0824 drum	120	5.99	1290	33.4	17500	273	15.6	K1.86	K2.33
80825 road	47600	58.9	8520	12.5	99.2	21.6	11.3	K1.70	K2.12
0825 MS									79%
(Sn)									
6 sk 4	9870	3.97	1280	83.2	146	44.0	940	K1.74	13.9
80827 on road off site	912	K1.17	373	6.37	32.6	8.12	7.13	K2.34	K2.92
80828 road	46200	19.6	84500	23.6	110	21.7	286	K1.53	K1.92
80829 road	989	K.740	4430	18.6	108	30.2	35.9	K1.47	K1.86
80829 MS	*	105	*	99	108	97	110	35	---
% Recovery									
80829 MSD	*	112	*	100	96	107	110	37	---
% Recovery									
RFD		6.4	*	1.0	11.8	9.8	1.0	5.6	---

*Spl. concentration too high.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173

DATE: November 14, 1990

SUBJ: Gas Chromatography-Mass Spectrometry Analysis of Extractable
Organics in Soils and Sediments - Harco Property

FROM: E.L. Elayne Lee, ESAT, *S. Suresh Srivastava* and Dick Siscanaw, Chemistry
Section

THRU: *Ed. G. D. W. J. Andrade* Dr. William J. Andrade, Chief, Chemistry Section

TO: Mary Ellen Stanton

PROJECT NUMBER: 900245

ANALYTICAL PROCEDURE:

EPA Consensus Protocol, Organic Analysis, Multi-Media, Multi-Concentration, Medium Level Preparation for Screening and Analysis of Semivolatiles (BNA), 1/87 (IFB WA 84-A266). All samples were screened on a gas chromatograph prior to the gas chromatograph-mass spectrometer analysis. All values are reported out on a dry weight basis.

Date(s) Samples Received by the Laboratory: 9/26/90

Date Samples Analyzed: 10/3-13/90

File: K:\CHEMSTRY\REPORTS\FINAL\900245SO.BNA

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02173

QUALITY CONTROL:

1. A laboratory blank was analyzed before the sample analysis.
2. Each sample was spiked with several surrogate compounds at approximately 200 mg/kg concentration. The results for the surrogate recoveries are reported out for each sample.
3. One sample, 80829 was spiked twice as a matrix spike duplicate with the following compounds at approximately 200 mg/kg concentration.

Compound	Rec. (%)	Rec. (%)	QC Range (%)	Comments
Acenaphthene	66	73	31-137	
4-Chloro-3-methylphenol	76	82	26-103	
2-Chlorophenol	75	85	25-102	
Di-n-butylphthalate	44	49	29-135	
1,4-Dichlorobenzene	67	76	28-104	
2,4-Dinitrotoluene	53	56	28-89	
4-Nitrophenol	47	62	11-114	
N-Nitrosodipropylamine	81	95	41-126	
Pentachlorophenol	35	52	17-109	
Phenol	77	86	26-90	
Pyrene	87	97	35-142	
1,2,4-Trichlorobenzene	65	74	38-107	

(Cont.)

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02173

COMPOUNDS NOT IN THE SPIKING SOLUTION:

Target
Compounds

Conc.
(ug/L)

Conc.
(ug/L)

None

Tentatively
Identified
Compounds

Conc.
(ug/L)

Conc.
(ug/L)

None

SAMPLE(S) ANALYZED: 80825 80826 80827 80828 80829

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02173

ANALYTICAL PARAMETERS

INSTRUMENTS:

Hewlett Packard 5880 Gas Chromatograph
Hewlett Packard 5987 Gas Chromatograph-Mass
Spectrometer

GC/FID Screening Conditions:

Gas:	Hydrogen
Capillary Column:	DB-5, 30m, 25mm ID, 0.25 micron film thickness
Injection Mode:	Splitless
Temperature Program:	Isothermal for 3 min at 40°C, programmed at 20°C/min to 350°C

GC-MS Conditions:

Gas:	Helium
Capillary Column:	DB-5, 60m, 25mm ID, 0.25 micron film thickness
Injection Mode:	Splitless
Temperature Program:	Isothermal for 4 min at 40°C, programmed at 7°C/min to 300°C
Injector, Transfer Temperatures:	300°C, 290°C
Electron Energy:	70 V
Mass Range:	35-550
Scan Rate:	0.9 seconds

FACILITY SAMPLED:

HARCO PROPERTY

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80824

Drum

SAMPLE LOCATION:

Sta 2

DATE OF COLLECTION:

Dilution Factor:

110

TIME OF COLLECTION:

Percent Moisture:

Sample pH:

6.3

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments

Priority Pollutants					
83-32-9	34205	Acenaphthene	ND	1100	
208-96-8	34200	Acenaphthylene	ND	1100	
120-12-7	34220	Anthracene	ND	1100	
309-00-2	39330	Aldrin	ND	1100	
56-55-3	34526	Benzo(a)anthracene	ND	1100	
205-99-2	34230	Benzo(b)fluoranthene	ND	1100	
207-08-9	34242	Benzo(k)fluoranthene	ND	1100	
50-32-8	34247	Benzo(a)pyrene	ND	1100	
191-24-2	34521	Benzo(ghi)perylene	ND	1100	
85-68-7	34292	Benzyl butyl phthalate	ND	1100	
319-85-7	39338	beta-BHC	ND	1100	
319-86-8	34259	delta-BHC	ND	1100	
111-44-4	34273	Bis(2-chloroethyl)ether	ND	1100	
111-91-1	34278	Bis(2-chloroethoxy)methane	ND	1100	
117-81-7	39100	Bis(2-ethylhexyl)phthalate	ND	1100	
108-60-1	34283	Bis(2-chloroisopropyl)ether	ND	1100	
101-55-3	34636	4-Bromophenylphenyl ether	ND	1100	
59-50-7	34452	4-Chloro-3-methylphenol	ND	1100	
91-58-7	34581	2-Chloronaphthalene	ND	1100	
95-57-8	34586	2-Chlorophenol	ND	1100	
7005-72-3	34641	4-Chlorophenylphenyl ether	ND	1100	
218-01-9	34320	Chrysene	ND	1100	
72-54-8	39310	4,4'-DDD	ND	1100	
72-55-9	39320	4,4'-DDE	ND	1100	
50-29-3	39300	4,4'-DDT	ND	1100	
53-70-3	34556	Dibenzo(a,h)anthracene	ND	1100	
84-74-2	39110	Di-n-butylphthalate	ND	1100	
541-73-1	34566	1,3-Dichlorobenzene	ND	1100	
		(con't)			

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80824 (Drum Sample)
Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
95-50-1	34536	1,2-Dichlorobenzene	ND	1100	
106-46-7	34571	1,4-Dichlorobenzene	ND	1100	
91-94-1	34631	3,3'-Dichlorobenzidine	ND	2200	
120-83-2	34601	2,4-Dichlorophenol	ND	1100	
60-57-1	39380	Dieldrin	ND	1100	
84-66-2	34336	Diethylphthalate	ND	1100	
105-67-9	34606	2-4-Dimethylphenol	ND	1100	
131-11-3	34341	Dimethylphthalate	ND	1100	
51-28-5	34616	2,4-Dinitrophenol	ND	5500	
121-14-2	34611	2,4-Dinitrotoluene	ND	1100	
606-20-2	34626	2,6-Dinitrotoluene	ND	1100	
117-84-0	34596	Di-n-octylphthalate	ND	1100	
206-44-0	34376	Fluoranthene	ND	1100	
86-73-7	34381	Fluorene	ND	1100	
76-44-8	39410	Heptachlor	ND	1100	
1024-57-3	39420	Heptachlor epoxide	ND	1100	
118-74-1	39700	Hexachlorobenzene	ND	1100	
87-68-3	34391	Hexachlorobutadiene	ND	1100	
77-47-4	34386	Hexachlorocyclopentadiene	ND	1100	
67-72-1	34396	Hexachloroethane	ND	1100	
193-39-5	34403	Indeno(1,2,3-cd)pyrene	ND	1100	
78-59-1	34408	Isophorone	ND	1100	
534-52-1	34657	2-methyl-4,6-dinitrophenol	ND	5500	
91-20-3	34696	Naphthalene	ND	1100	
98-95-3	34447	Nitrobenzene	ND	1100	
88-75-5	34591	2-Nitrophenol	ND	1100	
100-02-7	34646	4-Nitrophenol	ND	5500	
86-30-3	34433	N-nitrosodiphenylamine	ND	1100	
621-64-7	34428	N-Nitrosodi-n-propylamine	ND	1100	
87-86-5	39032	Pentachlorophenol	ND	5500	
85-01-8	34461	Phenanthrene	ND	1100	
108-95-2	34694	Phenol	ND	1100	
129-00-0	34469	Pyrene	ND	1100	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80824

Drum 5A 2

Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
120-82-1	34551	1,2,4--Trichlorobenzene	ND	1100	
88-06-2	34621	2,4,6-Trichlorophenol	ND	1100	
<hr/> Hazardous Substances <hr/>					
65-53-3	77089	Aniline	ND	1100	
65-85-0	77247	Benzoic Acid	ND	5500	
100-51-6	77147	Benzyl Alcohol	ND	1100	
106-47-8		4-Chloroaniline	ND	1100	
132-64-9	81302	Dibenzofuran	ND	1100	
534-52-1		4,6-Dinitro-2-methylphenol	ND	5500	
91-57-6		2-Methylnaphthalene	ND	1100	
95-48-7		2-Methylphenol	ND	1100	
106-44-5		4-Methylphenol	ND	1100	
88-74-4		2-Nitroaniline	ND	5500	
99-09-2		3-Nitroaniline	ND	5500	
100-01-6		4-Nitroaniline	ND	5500	
95-95-4	34621	2,4,5-Trichlorophenol	ND	5500	

Other Compounds Quantitated

None

Tentatively Identified Compounds

Decanedioic acid, ~36% w/w
didecyl ester

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80824

Drum STA 2

Sample Results Continued:

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
2-Fluorophenol	NA	30-115
Phenol, d5	NA	24-113
Nitrobenzene, d5	NA	23-120
Fluorobiphenyl	NA	30-115
2,4,6-Tribromophenol	NA	19-122
p-Terphenyl, d14	NA	18-137

Notes:

ND = none detected

~ = approximate

< = less than

> = greater than

NA = not available, due to sample dilution
or interference

FACILITY SAMPLED:

HARCO PROPERTY

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80825

SAMPLE LOCATION:

DATE OF COLLECTION:

TIME OF COLLECTION:

SAMPLE RESULTS:

Dilution Factor:

Percent Moisture:

Sample pH:

Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
------------------	--------------------------	----------

CAS
NO.STORET
NO.

Compound

Priority Pollutants

83-32-9	34205	Acenaphthene	ND	4
208-96-8	34200	Acenaphthylene	ND	4
120-12-7	34220	Anthracene	ND	4
309-00-2	39330	Aldrin	ND	4
56-55-3	34526	Benzo(a)anthracene	ND	4
205-99-2	34230	Benzo(b)fluoranthene	ND	4
207-08-9	34242	Benzo(k)fluoranthene	ND	4
50-32-8	34247	Benzo(a)pyrene	ND	4
191-24-2	34521	Benzo(ghi)perylene	ND	4
85-68-7	34292	Benzyl butyl phthalate	ND	4
319-85-7	39338	beta-BHC	ND	4
319-86-8	34259	delta-BHC	ND	4
111-44-4	34273	Bis(2-chloroethyl)ether	ND	4
111-91-1	34278	Bis(2-chloroethoxy)methane	ND	4
117-81-7	39100	Bis(2-ethylhexyl)phthalate	ND	4
108-60-1	34283	Bis(2-chloroisopropyl)ether	ND	4
101-55-3	34636	4-Bromophenylphenyl ether	ND	4
59-50-7	34452	4-Chloro-3-methylphenol	ND	4
91-58-7	34581	2-Chloronaphthalene	ND	4
95-57-8	34586	2-Chlorophenol	ND	4
7005-72-3	34641	4-Chlorophenylphenyl ether	ND	4
218-01-9	34320	Chrysene	ND	4
72-54-8	39310	4,4'-DDD	ND	4
72-55-9	39320	4,4'-DDE	ND	4
50-29-3	39300	4,4'-DDT	ND	4
53-70-3	34556	Dibenzo(a,h)anthracene	ND	4
84-74-2	39110	Di-n-butylphthalate	ND	4
541-73-1	34566	1,3-Dichlorobenzene	ND	4

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80825

Sample Results Continued:

STA 3
Road

CAS NO.	STORET NO.	Compound	Conc. (ng/kg)	Det. Limit (ng/kg)	Comments
95-50-1	34536	1,2-Dichlorobenzene	ND	4	
106-46-7	34571	1,4-Dichlorobenzene	ND	4	
91-94-1	34631	3,3'-Dichlorobenzidine	ND	8	
120-83-2	34601	2,4-Dichlorophenol	ND	4	
60-57-1	39380	Dieldrin	ND	4	
84-66-2	34336	Diethylphtalate	ND	4	
105-67-9	34606	2-4-Dimethylphenol	ND	4	
131-11-3	34341	Dimethylphthalate	ND	4	
51-28-5	34616	2,4-Dinitrophenol	ND	20	
121-14-2	34611	2,4-Dinitrotoluene	ND	4	
606-20-2	34626	2,6-Dinitrotoluene	ND	4	
117-84-0	34596	Di-n-octylphthalate	ND	4	
206-44-0	34376	Fluoranthene	ND	4	
86-73-7	34381	Fluorene	ND	4	
76-44-8	39410	Heptachlor	ND	4	
1024-57-3	39420	Heptachlor epoxide	ND	4	
118-74-1	39700	Hexachlorobenzene	ND	4	
87-68-3	34391	Hexachlorobutadiene	ND	4	
77-47-4	34386	Hexachlorocyclopentadiene	ND	4	
67-72-1	34396	Hexachloroethane	ND	4	
193-39-5	34403	Indeno(1,2,3-cd)pyrene	ND	4	
78-59-1	34408	Isophorone	ND	4	
534-52-1	34657	2-methyl-4,6-dinitrophenol	ND	20	
91-20-3	34696	Naphthalene	ND	4	
98-95-3	34447	Nitrobenzene	ND	4	
88-75-5	34591	2-Nitrophenol	ND	4	
100-02-7	34646	4-Nitrophenol	ND	20	
86-30-3	34433	N-nitrosodiphenylamine	ND	4	
621-64-7	34428	N-Nitrosodi-n-propylamine	ND	4	
87-86-5	39032	Pentachlorophenol	ND	20	
85-01-8	34461	Phenanthrene	ND	4	
108-95-2	34694	Phenol	ND	4	
129-00-0	34469	Pyrene	ND	4	

(cont't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO. ~~60825~~ *SA 3*

Sample Results Continued: *Road*

CAS NO.	STORET NO.	Compound	Conc. (ng/kg)	Det. Limit (ng/kg)	Comments
120-82-1	34551	1,2,4--Trichlorobenzene	ND	4	
88-06-2	34621	2,4,6-Trichlorophenol	ND	4	
<hr/> Hazardous Substances <hr/>					
65-53-3	77089	Aniline	ND	4	
65-85-0	77247	Benzoic Acid	ND	20	
100-51-6	77147	Benzyl Alcohol	ND	4	
106-47-8		4-Chloroaniline	ND	4	
132-64-9	81302	Dibenzofuran	ND	4	
534-52-1		4,6-Dinitro-2-methylphenol	ND	20	
91-57-6		2-Methylnaphthalene	ND	4	
95-48-7		2-Methylphenol	ND	4	
106-44-5		4-Methylphenol	ND	4	
88-74-4		2-Nitroaniline	ND	20	
99-09-2		3-Nitroaniline	ND	20	
100-01-6		4-Nitroaniline	ND	20	
95-95-4	34621	2,4,5-Trichlorophenol	ND	20	

Other Compounds Quantitated

None

Tentatively Identified Compounds

Triazole-carboxaldehyde	4
Unknown	5

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80825

Sample Results Continued:

STA 3
Road

Sample Recoveries For
Surrogate Compounds:

Recoveries
(%)

QC Range
(%)

2-Fluorophenol	84	30-115
Phenol, d5	86	24-113
Nitrobenzene, d5	76	23-120
Fluorobiphenyl	72	30-115
2,4,6-Tribromophenol	82	19-122
p-Terphenyl, d14	88	18-137

Notes:

ND = none detected

~ = approximate

< = less than

> = greater than

NA = not available, due to sample dilution
or interference

FACILITY SAMPLED:

HARCO PROPERTY

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80826

SAMPLE LOCATION:

DATE OF COLLECTION:

TIME OF COLLECTION:

SAMPLE RESULTS:

STA 4
off Road

Dilution Factor: 0.25

Percent Moisture: 32

Sample pH: 7.3

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments

Priority Pollutants					
83-32-9	34205	Acenaphthene	ND	3.9	
208-96-8	34200	Acenaphthylene	ND	3.9	
120-12-7	34220	Anthracene	ND	3.9	
309-00-2	39330	Aldrin	ND	3.9	
56-55-3	34526	Benzo(a)anthracene	ND	3.9	
205-99-2	34230	Benzo(b)fluoranthene	ND	3.9	
207-08-9	34242	Benzo(k)fluoranthene	ND	3.9	
50-32-8	34247	Benzo(a)pyrene	ND	3.9	
191-24-2	34521	Benzo(ghi)perylene	ND	3.9	
85-68-7	34292	Benzyl butyl phthalate	ND	3.9	
319-85-7	39338	beta-BHC	ND	3.9	
319-86-8	34259	delta-BHC	ND	3.9	
111-44-4	34273	Bis(2-chloroethyl)ether	ND	3.9	
111-91-1	34278	Bis(2-chloroethoxy)methane	ND	3.9	
117-81-7	39100	Bis(2-ethylhexyl)phthalate	ND	3.9	
108-60-1	34283	Bis(2-chloroisopropyl)ether	ND	3.9	
101-55-3	34636	4-Bromophenylphenyl ether	ND	3.9	
59-50-7	34452	4-Chloro-3-methylphenol	ND	3.9	
91-58-7	34581	2-Chloronaphthalene	ND	3.9	
95-57-8	34586	2-Chlorophenol	ND	3.9	
7005-72-3	34641	4-Chlorophenylphenyl ether	ND	3.9	
218-01-9	34320	Chrysene	ND	3.9	
72-54-8	39310	4,4'-DDD	ND	3.9	
72-55-9	39320	4,4'-DDE	ND	3.9	
50-29-3	39300	4,4'-DDT	ND	3.9	
53-70-3	34556	Dibenzo(a,h)anthracene	ND	3.9	
84-74-2	39110	Di-n-butylphthalate	ND	3.9	
541-73-1	34566	1,3-Dichlorobenzene	ND	3.9	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80826

Sample Results Continued:

STA 4
off Road

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
95-50-1	34536	1,2-Dichlorobenzene	ND	3.9	
106-46-7	34571	1,4-Dichlorobenzene	ND	3.9	
91-94-1	34631	3,3'-Dichlorobenzidine	ND	7.8	
120-83-2	34601	2,4-Dichlorophenol	ND	3.9	
60-57-1	39380	Dieldrin	ND	3.9	
84-66-2	34336	Diethylphthalate	ND	3.9	
105-67-9	34606	2-4-Dimethylphenol	ND	3.9	
131-11-3	34341	Dimethylphthalate	ND	3.9	
51-28-5	34616	2,4-Dinitrophenol	ND	19.5	
121-14-2	34611	2,4-Dinitrotoluene	ND	3.9	
606-20-2	34626	2,6-Dinitrotoluene	ND	3.9	
117-84-0	34596	Di-n-octylphthalate	ND	3.9	
206-44-0	34376	Fluoranthene	~0.9	3.9	
86-73-7	34381	Fluorene	ND	3.9	
76-44-8	39410	Heptachlor	ND	3.9	
1024-57-3	39420	Heptachlor epoxide	ND	3.9	
118-74-1	39700	Hexachlorobenzene	ND	3.9	
87-68-3	34391	Hexachlorobutadiene	ND	3.9	
77-47-4	34386	Hexachlorocyclopentadiene	ND	3.9	
67-72-1	34396	Hexachloroethane	ND	3.9	
193-39-5	34403	Indeno(1,2,3-cd)pyrene	ND	3.9	
78-59-1	34408	Isophorone	ND	3.9	
534-52-1	34657	2-methyl-4,6-dinitrophenol	ND	19.5	
91-20-3	34696	Naphthalene	ND	3.9	
98-95-3	34447	Nitrobenzene	ND	3.9	
88-75-5	34591	2-Nitrophenol	ND	3.9	
100-02-7	34646	4-Nitrophenol	ND	19.5	
86-30-3	34433	N-nitrosodiphenylamine	ND	3.9	
621-64-7	34428	N-Nitrosodi-n-propylamine	ND	3.9	
87-86-5	39032	Pentachlorophenol	ND	19.5	
85-01-8	34461	Phenanthrene	ND	3.9	
108-95-2	34694	Phenol	ND	3.9	
129-00-0	34469	Pyrene	~0.9	3.9	

(cont't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80826

Sample Results Continued:

STA 4
off Road

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
120-82-1	34551	1,2,4--Trichlorobenzene	ND	3.9	
88-06-2	34621	2,4,6-Trichlorophenol	ND	3.9	
<hr/>					
Hazardous Substances					
65-53-3	77089	Aniline	ND	3.9	
65-85-0	77247	Benzoic Acid	ND	19.5	
100-51-6	77147	Benzyl Alcohol	ND	3.9	
106-47-8		4-Chloroaniline	ND	3.9	
132-64-9	81302	Dibenzofuran	ND	3.9	
534-52-1		4,6-Dinitro-2-methylphenol	ND	19.5	
91-57-6		2-Methylnaphthalene	ND	3.9	
95-48-7		2-Methylphenol	ND	3.9	
106-44-5		4-Methylphenol	ND	3.9	
88-74-4		2-Nitroaniline	ND	19.5	
99-09-2		3-Nitroaniline	ND	19.5	
100-01-6		4-Nitroaniline	ND	19.5	
95-95-4	34621	2,4,5-Trichlorophenol	ND	19.5	
<hr/>					
Other Compounds Quantitated					
None					

Tentatively Identified Compounds

None

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80826

Sample Results Continued:

SA 4 off Road

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
2-Fluorophenol	69	30-115
Phenol, d5	87	24-111
Nitrobenzene, d5	82	23-120
Fluorobiphenyl	77	30-115
2,4,6-Tribromophenol	49	19-122
p-Terphenyl, d14	101	18-137

Notes:

ND = none detected

~ = approximate

< = less than

> = greater than

NA = not available, due to sample dilution
or interference

FACILITY SAMPLED:

HARCO PROPERTY

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80827

SAMPLE LOCATION:

DATE OF COLLECTION:

TIME OF COLLECTION:

SAMPLE RESULTS:

Dilution Factor: 1.4

Percent Moisture: 46

Sample pH: 7.2

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments

Priority Pollutants					
83-32-9	34205	Acenaphthene	ND	14	
208-96-8	34200	Acenaphthylene	ND	14	
120-12-7	34220	Anthracene	ND	14	
309-00-2	39330	Aldrin	ND	14	
56-55-3	34526	Benzo(a)anthracene	ND	14	
205-99-2	34230	Benzo(b)fluoranthene	ND	14	
207-08-9	34242	Benzo(k)fluoranthene	ND	14	
50-32-8	34247	Benzo(a)pyrene	ND	14	
191-24-2	34521	Benzo(ghi)perylene	ND	14	
85-68-7	34292	Benzyl butyl phthalate	ND	14	
319-85-7	39338	beta-BHC	ND	14	
319-86-8	34259	delta-BHC	ND	14	
111-44-4	34273	Bis(2-chloroethyl)ether	ND	14	
111-91-1	34278	Bis(2-chloroethoxy)methane	ND	14	
117-81-7	39100	Bis(2-ethylhexyl)phthalate	ND	14	
108-60-1	34283	Bis(2-chloroisopropyl)ether	ND	14	
101-55-3	34636	4-Bromophenylphenyl ether	ND	14	
59-50-7	34452	4-Chloro-3-methylphenol	ND	14	
91-58-7	34581	2-Chloronaphthalene	ND	14	
95-57-8	34586	2-Chlorophenol	ND	14	
7005-72-3	34641	4-Chlorophenylphenyl ether	ND	14	
218-01-9	34320	Chrysene	ND	14	
72-54-8	39310	4,4'-DDD	ND	14	
72-55-9	39320	4,4'-DDE	ND	14	
50-29-3	39300	4,4'-DDT	ND	14	
53-70-3	34556	Dibenzo(a,h)anthracene	ND	14	
84-74-2	39110	Di-n-butylphthalate	ND	14	
541-73-1	34566	1,3-Dichlorobenzene	ND	14	
		(con't)			

US ENVIRONMENTAL PROTECTION AGENCY
REGION 1 LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

Handwritten: 5-11-81
off site

SAMPLE NO.: 80827
Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (ng/kg)	Limit (ng/kg)	Comment
95-50-1	34536	1,2-Dichlorobenzene	ND	14	
106-46-7	34571	1,4-Dichlorobenzene	ND	14	
91-94-1	34631	3,3'-Dichlorobenzidine	ND	28	
120-83-2	34601	2,4-Dichlorophenol	ND	14	
60-57-1	39380	Dieldrin	ND	14	
84-66-2	34336	Diethylphthalate	ND	14	
105-67-9	34606	2-4-Dimethylphenol	ND	14	
131-11-3	34341	Dimethylphthalate	ND	14	
51-28-5	34616	2,4-Dinitrophenol	ND	70	
121-14-2	34611	2,4-Dinitrotoluene	ND	14	
606-20-2	34626	2,6-Dinitrotoluene	ND	14	
117-84-0	34596	Di-n-octylphthalate	ND	14	
206-44-0	34376	Fluoranthene	ND	14	
86-73-7	34381	Fluorene	ND	14	
76-44-8	39410	Heptachlor	ND	14	
1024-57-3	39420	Heptachlor epoxide	ND	14	
118-74-1	39700	Hexachlorobenzene	ND	14	
87-68-3	34391	Hexachlorobutadiene	ND	14	
77-47-4	34386	Hexachlorocyclopentadiene	ND	14	
67-72-1	34396	Hexachloroethane	ND	14	
193-39-5	34403	Indeno(1,2,3-cd)pyrene	ND	14	
78-59-1	34408	Isophorone	ND	14	
534-52-1	34657	2-methyl-4,6-dinitrophenol	ND	70	
91-20-3	34696	Naphthalene	ND	14	
98-95-3	34447	Nitrobenzene	ND	14	
88-75-5	34591	2-Nitrophenol	ND	14	
100-02-7	34646	4-Nitrophenol	ND	70	
86-30-3	34433	N-nitrosodiphenylamine	ND	14	
621-64-7	34428	N-Nitrosodi-n-propylamine	ND	14	
87-86-5	39032	Pentachlorophenol	ND	70	
85-01-8	34461	Phenanthrene	ND	14	
108-95-2	34694	Phenol	ND	14	
129-00-0	34469	Pyrene	ND	14	

(cont't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80827

Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (ng/kg)	Det. Limit (ng/kg)	Comments
120-82-1	34551	1,2,4--Trichlorobenzene	ND	14	
88-06-2	34621	2,4,6-Trichlorophenol	ND	14	
Hazardous Substances					
65-53-3	77089	Aniline	ND	14	
65-85-0	77247	Benzoic Acid	ND	70	
100-51-6	77147	Benzyl Alcohol	ND	14	
106-47-8		4-Chloroaniline	ND	14	
132-64-9	81302	Dibenzofuran	ND	14	
534-52-1		4,6-Dinitro-2-methylphenol	ND	70	
91-57-6		2-Methylnaphthalene	ND	14	
95-48-7		2-Methylphenol	ND	14	
106-44-5		4-Methylphenol	ND	14	
88-74-4		2-Nitroaniline	ND	70	
99-09-2		3-Nitroaniline	ND	70	
100-01-6		4-Nitroaniline	ND	70	
95-95-4	34621	2,4,5-Trichlorophenol	ND	70	

Other Compounds Quantitated

None

Tentatively Identified Compounds

Hexane dioic acid, dioctyl ester	40
Aliphatic hydrocarbon, C-9	9
Aliphatic hydrocarbon, C-16	7
Aliphatic hydrocarbon, C-21	9
Unknown	7

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80827

Sample Results Continued:

HA 5
off-Site

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
2-Fluorophenol	100	30-115
Phenol, d5	93	24-113
Nitrobenzene, d5	78	23-120
Fluorobiphenyl	67	30-115
2,4,6-Tribromophenol	96	19-122
p-Terphenyl, d14	91	18-137

Notes:

ND = none detected

~ = approximate

< = less than

> = greater than

NA = not available, due to sample dilution
or interference

FACILITY SAMPLED:

HARCO PROPERTY

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80828

SAMPLE LOCATION:

DATE OF COLLECTION:

TIME OF COLLECTION:

SAMPLE RESULTS:

Dilution Factor: 0.78

Percent Moisture: 19

Sample pH: 6.5

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments

Priority Pollutants					
83-32-9	34205	Acenaphthene	ND	7.8	
208-96-8	34200	Acenaphthylene	ND	7.8	
120-12-7	34220	Anthracene	ND	7.8	
309-00-2	39330	Aldrin	ND	7.8	
56-55-3	34526	Benzo(a)anthracene	ND	7.8	
205-99-2	34230	Benzo(b)fluoranthene	ND	7.8	
207-08-9	34242	Benzo(k)fluoranthene	ND	7.8	
50-32-8	34247	Benzo(a)pyrene	ND	7.8	
191-24-2	34521	Benzo(ghi)perylene	ND	7.8	
85-68-7	34292	Benzyl butyl phthalate	ND	7.8	
319-85-7	39338	beta-BHC	ND	7.8	
319-86-8	34259	delta-BHC	ND	7.8	
111-44-4	34273	Bis(2-chloroethyl)ether	ND	7.8	
111-91-1	34278	Bis(2-chloroethoxy)methane	ND	7.8	
117-81-7	39100	Bis(2-ethylhexyl)phthalate	ND	7.8	
108-60-1	34283	Bis(2-chloroisopropyl)ether	ND	7.8	
101-55-3	34636	4-Bromophenylphenyl ether	ND	7.8	
59-50-7	34452	4-Chloro-3-methylphenol	ND	7.8	
91-58-7	34581	2-Chloronaphthalene	ND	7.8	
95-57-8	34586	2-Chlorophenol	ND	7.8	
7005-72-3	34641	4-Chlorophenylphenyl ether	ND	7.8	
218-01-9	34320	Chrysene	ND	7.8	
72-54-8	39310	4,4'-DDD	ND	7.8	
72-55-9	39320	4,4'-DDE	ND	7.8	
50-29-3	39300	4,4'-DDT	ND	7.8	
53-70-3	34556	Dibenzo(a,h)anthracene	ND	7.8	
84-74-2	39110	Di-n-butylphthalate	ND	7.8	
541-73-1	34566	1,3-Dichlorobenzene	ND	7.8	
(con't)					

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

*GA 6
Road
High lead*

SAMPLE NO.: 80828

Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
95-50-1	34536	1,2-Dichlorobenzene	ND	7.8	
106-46-7	34571	1,4-Dichlorobenzene	ND	7.8	
91-94-1	34631	3,3'-Dichlorobenzidine	ND	15.6	
120-83-2	34601	2,4-Dichlorophenol	ND	7.8	
60-57-1	39380	Dieldrin	ND	7.8	
84-66-2	34336	Diethylphtalate	ND	7.8	
105-67-9	34606	2-4-Dimethylphenol	ND	7.8	
131-11-3	34341	Dimethylphthalate	ND	7.8	
51-28-5	34616	2,4-Dinitrophenol	ND	39	
121-14-2	34611	2,4-Dinitrotoluene	ND	7.8	
506-20-2	34626	2,6-Dinitrotoluene	ND	7.8	
117-84-0	34596	Di-n-octylphthalate	ND	7.8	
206-44-0	34376	Fluoranthene	ND	7.8	
86-73-7	34381	Fluorene	ND	7.8	
76-44-8	39410	Heptachlor	ND	7.8	
1024-57-3	39420	Heptachlor epoxide	ND	7.8	
118-74-1	39700	Hexachlorobenzene	ND	7.8	
87-68-3	34391	Hexachlorobutadiene	ND	7.8	
77-47-4	34386	Hexachlorocyclopentadiene	ND	7.8	
67-72-1	34396	Hexachloroethane	ND	7.8	
193-39-5	34403	Indeno(1,2,3-cd)pyrene	ND	7.8	
78-59-1	34408	Isophorone	ND	7.8	
534-52-1	34657	2-methyl-4,6-dinitrophenol	ND	39	
91-20-3	34696	Naphthalene	ND	7.8	
98-95-3	34447	Nitrobenzene	ND	7.8	
88-75-5	34591	2-Nitrophenol	ND	7.8	
100-02-7	34646	4-Nitrophenol	ND	39	
86-30-3	34433	N-nitrosodiphenylamine	ND	7.8	
621-64-7	34428	N-Nitrosodi-n-propylamine	ND	7.8	
87-86-5	39032	Pentachlorophenol	ND	39	
85-01-8	34461	Phenanthrene	ND	7.8	
108-95-2	34694	Phenol	ND	7.8	
129-00-0	34469	Pyrene	ND	7.8	

(cont't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

*Sta 6
Road
High lead*

SAMPLE NO.: 80820
Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
120-82-1	34551	1,2,4--Trichlorobenzene	ND	7.8	
88-06-2	34621	2,4,6-Trichlorophenol	ND	7.8	

Hazardous Substances

65-53-3	77089	Aniline	ND	7.8	
65-85-0	77247	Benzoic Acid	ND	39	
100-51-6	77147	Benzyl Alcohol	ND	7.8	
106-47-8		4-Chloroaniline	ND	7.8	
132-64-9	81302	Dibenzofuran	ND	7.8	
534-52-1		4,6-Dinitro-2-methylphenol	ND	39	
91-57-6		2-Methylnaphthalene	ND	7.8	
95-48-7		2-Methylphenol	ND	7.8	
106-44-5		4-Methylphenol	ND	7.8	
88-74-4		2-Nitroaniline	ND	39	
99-09-2		3-Nitroaniline	ND	39	
100-01-6		4-Nitroaniline	ND	39	
95-95-4	34621	2,4,5-Trichlorophenol	ND	39	

Other Compounds Quantitated

None

Tentatively Identified Compounds

None

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

Sta 6
Road
High Lead

SAMPLE NO.: 80828

Sample Results Continued:

Sample Recoveries For
Surrogate Compounds:

Recoveries
(%)

QC Range
(%)

2-Fluorophenol	92	30-115
Phenol, d5	89	24-113
Nitrobenzene, d5	78	23-120
Fluorobiphenyl	70	30-115
2,4,6-Tribromophenol	79	19-122
p-Terphenyl, d14	96	18-137

Notes:

ND = none detected

~ = approximate

< = less than

> = greater than

NA = not available, due to sample dilution
or interference

FACILITY SAMPLED:

HARCO PROPERTY

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80829

SAMPLE LOCATION:

DATE OF COLLECTION:

TIME OF COLLECTION:

SAMPLE RESULTS:

Dilution Factor: 0.85

Percent Moisture: 13

Sample pH: 7.8

STA 7
Road

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
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Priority Pollutants

83-32-9	34205	Acenaphthene	ND	8.5	
208-96-8	34200	Acenaphthylene	ND	8.5	
120-12-7	34220	Anthracene	ND	8.5	
309-00-2	39330	Aldrin	ND	8.5	
56-55-3	34526	Benzo(a)anthracene	ND	8.5	
205-99-2	34230	Benzo(b)fluoranthene	ND	8.5	
207-08-9	34242	Benzo(k)fluoranthene	ND	8.5	
50-32-8	34247	Benzo(a)pyrene	ND	8.5	
191-24-2	34521	Benzo(ghi)perylene	ND	8.5	
85-68-7	34292	Benzyl butyl phthalate	ND	8.5	
319-85-7	39338	beta-BHC	ND	8.5	
319-86-8	34259	delta-BHC	ND	8.5	
111-44-4	34273	Bis(2-chloroethyl) ether	ND	8.5	
111-91-1	34278	Bis(2-chloroethoxy) methane	ND	8.5	
117-81-7	39100	Bis(2-ethylhexyl) phthalate	ND	8.5	
108-60-1	34283	Bis(2-chloroisopropyl) ether	ND	8.5	
101-55-3	34636	4-Bromophenylphenyl ether	ND	8.5	
59-50-7	34452	4-Chloro-3-methylphenol	ND	8.5	
91-58-7	34581	2-Chloronaphthalene	ND	8.5	
95-57-8	34586	2-Chlorophenol	ND	8.5	
7005-72-3	34641	4-Chlorophenylphenyl ether	ND	8.5	
218-01-9	34320	Chrysene	ND	8.5	
72-54-8	39310	4,4'-DDD	ND	8.5	
72-55-9	39320	4,4'-DDE	ND	8.5	
50-29-3	39300	4,4'-DDT	ND	8.5	
53-70-3	34556	Dibenzo(a,h)anthracene	ND	8.5	
84-74-2	39110	Di-n-butylphthalate	ND	8.5	
541-73-1	34566	1,3-Dichlorobenzene	ND	8.5	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

547
Road

SAMPLE NO.: 80829

Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
95-50-1	34536	1,2-Dichlorobenzene	ND	8.5	
106-46-7	34571	1,4-Dichlorobenzene	ND	8.5	
91-94-1	34631	3,3'-Dichlorobenzidine	ND	17	
120-83-2	34601	2,4-Dichlorophenol	ND	8.5	
60-57-1	39380	Dieldrin	ND	8.5	
84-66-2	34336	Diethylphthalate	ND	8.5	
105-67-9	34606	2-4-Dimethylphenol	ND	8.5	
131-11-3	34341	Dimethylphthalate	ND	8.5	
51-28-5	34616	2,4-Dinitrophenol	ND	42.5	
121-14-2	34611	2,4-Dinitrotoluene	ND	8.5	
606-20-2	34626	2,6-Dinitrotoluene	ND	8.5	
117-84-0	34596	Di-n-octylphthalate	ND	8.5	
106-44-0	34376	Fluoranthene	ND	8.5	
86-73-7	34381	Fluorene	ND	8.5	
76-44-8	39410	Heptachlor	ND	8.5	
1024-57-3	39420	Heptachlor epoxide	ND	8.5	
118-74-1	39700	Hexachlorobenzene	ND	8.5	
87-68-3	34391	Hexachlorobutadiene	ND	8.5	
77-47-4	34386	Hexachlorocyclopentadiene	ND	8.5	
67-72-1	34396	Hexachloroethane	ND	8.5	
193-39-5	34403	Indeno(1,2,3-cd)pyrene	ND	8.5	
78-59-1	34408	Isophorone	ND	8.5	
534-52-1	34657	2-methyl-4,6-dinitrophenol	ND	42.5	
91-20-3	34696	Naphthalene	ND	8.5	
98-95-3	34447	Nitrobenzene	ND	8.5	
88-75-5	34591	2-Nitrophenol	ND	8.5	
100-02-7	34646	4-Nitrophenol	ND	42.5	
86-30-3	34433	N-nitrosodiphenylamine	ND	8.5	
621-64-7	34428	N-Nitrosodi-n-propylamine	ND	8.5	
87-86-5	39032	Pentachlorophenol	ND	42.5	
85-01-8	34461	Phenanthrene	ND	8.5	
108-95-2	34694	Phenol	ND	8.5	
129-00-0	34469	Pyrene	ND	8.5	

(cont't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

5A
7
Road

SAMPLE NO.: 80829
Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (mg/kg)	Det. Limit (mg/kg)	Comments
120-82-1	34551	1,2,4--Trichlorobenzene	ND	8.5	
88-06-2	34621	2,4,6-Trichlorophenol	ND	8.5	
<hr/> Hazardous Substances <hr/>					
65-53-3	77089	Aniline	ND	8.5	
65-85-0	77247	Benzoic Acid	ND	42.5	
100-51-6	77147	Benzyl Alcohol	ND	8.5	
106-47-8		4-Chloroaniline	ND	8.5	
132-64-9	81302	Dibenzofuran	ND	8.5	
534-52-1		4,6-Dinitro-2-methylphenol	ND	42.5	
91-57-6		2-Methylnaphthalene	ND	8.5	
95-48-7		2-Methylphenol	ND	8.5	
106-44-5		4-Methylphenol	ND	8.5	
88-74-4		2-Nitroaniline	ND	42.5	
99-09-2		3-Nitroaniline	ND	42.5	
100-01-6		4-Nitroaniline	ND	42.5	
95-95-4	34621	2,4,5-Trichlorophenol	ND	42.5	

Other Compounds Quantitated

None

Tentatively Identified Compounds

None

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: 80829

Sample Results Continued:

STA 7 Road

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
2-Fluorophenol	87	30-115
Phenol, d5	84	24-113
Nitrobenzene, d5	72	23-120
Fluorobiphenyl	66	30-115
2,4,6-Tribromophenol	79	19-122
p-Terphenyl, d14	86	18-137

Notes:

ND = none detected
~ = approximate
< = less than
> = greater than
NA = not available, due to sample dilution
or interference

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA. 02173

DATE: 11/26/90

SUBJECT: Harco Properties - Purgeable Organic Analysis
Samples Received: 80823 Trip Blank, 80824 Drum Waste 80825 - 80829
Samples Analyzed by GC/MS: Same

FROM: Steven Heller ESAT Chemist, Joseph Montanaro EPA Chemist

TO: Mary Ellen Stanton, EEE

THRU: Dr. William Andrade
Chief, Chemistry Section

Ch. Andrade
for Dr. W. S. Andrade

PROJECT NUMBER: 900245

DATE(S) SAMPLES RECEIVED BY THE LABORATORY: 9/26/90

ANALYTICAL PROCEDURE:

Soil: Approximately 4 grams (wet weight) of sample is tared in a 40ml VOA vial. Nine mls of pesticide grade methanol and one ml of fluorobenzene surrogate spiking solution is added to the vial. The sample is then shaken for approximately 2 minutes. A portion of the methanol extract is diluted in organic-free water and then analyzed as per SW-846 3rd revision, Method 8240. Concentration is based on dry weight analyzed.

QUALITY CONTROL:

1. A method blank was analyzed prior to sample analysis.
2. Each sample was spiked with three surrogate compounds at approximately 30 ppb concentration. The results for the surrogate recoveries are reported for each sample.
3. Sample 80829 was analyzed in duplicate to determine laboratory precision and accuracy.

DATA FILE: D:\LABRPTS\900245SO.VOA

cc: Mary Jane Cuzzupe, Scott Clifford

ANALYTICAL PARAMETERS
PURGEABLE ORGANIC ANALYSIS

INSTRUMENTS:

Tekmar ALS
Tekmar LSC-4000
Finnigan INCOS-50

PURGE CONDITIONS:

Gas:

Helium

Purge Time and Flow:

11 min., 40 ml/min

Trap:

25 cm stainless steel
(1/8 in. OD) packed with
15 cm 60/80 mesh Tenax
GC plus 8 cm 35/80 mesh
Davison type 15 Silica
Gel

Desorption Time, Flow, Temperature:

4 min, 20ml/min., 180C

Bake out cycle:

12 min.

CHROMATOGRAPHIC CONDITIONS:

Column:

30 meter long x 0.5 mm ID
DB 624 mega-bore column

Program:

Initial 5 C ramped at 2 C/min
to 10 C. Hold at 10 C for
5 minutes, then programmed
at 6 C/min to 160 C and held
for 1 minute.

Injector, Separator, and
Transfer Temperatures:

220 C, 220 C, 220 C

Carrier Gas and Flow:

Helium, 30 ml/min

MASS SPECTROMETER CONDITIONS:

Electron Energy:

70 V

Mass Range:

35,300

Scan Rate:

1.5 seconds

MATRIX SPIKE DUPLICATE ANALYSIS

Survey: Harco Properties
 Sample Number: 80829
 Date: 10/9/90

ACCURACY

COMPOUND	AVERAGE % RECOVERY	ACCEPTABLE RANGE *
Dichloroethylene	246	D-234
Benzene	97	37-151
Trichloroethylene	88	71-157
Toluene	86	47-150
Chlorobenzene	92	37-160

PRECISION

Compound	#1 RECOVERY	#2 RECOVERY	RPD
Dichloroethylene	233	259	10
Benzene	92	102	10
Trichloroethylene	82	94	14
Toluene	84	89	6
Chlorobenzene	89	94	5

* Acceptance limit from Federal Register Table 5, Method 624

FACILITY SAMPLED: Harco Properties

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS PURGEABLE ORGANIC ANALYSIS - Water

SAMPLE NO.: 80823 Trip Blank

SAMPLE LOCATION:

DATE OF ANALYSIS: 10/9/90

REFERENCE BOOK: 112

PRESERVATIVE: Cool to 4°C

INSTRUMENT: INCOS-50

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/L)	Det. Limit (ug/L)	Comments

TARGET COMPOUNDS					
4-87-3	34418	Chloromethane	ND	2	
4-83-9	34413	Bromomethane	ND	1	
01-4	39175	Vinyl Chloride	ND	1	
00-3	34311	Chloroethane	ND	1	
5-09-2	34423	Methylene Chloride	ND	1	
5-69-4	34488	Trichlorofluoromethane	ND	1	
35-4	34501	1,1-Dichloroethylene	ND	1	
34-3	34496	1,1-Dichloroethane	ND	1	
56-60-5	34546	1,2-Dichloroethylene isomers	ND	1	
66-3	32106	Chloroform	ND	1	
6-2	34531	1,2-Dichloroethane	ND	1	
55-6	34506	1,1,1-Trichloroethane	ND	1	
6-23-5	32102	Carbon Tetrachloride	ND	1	
27-4	32101	Bromodichloromethane	ND	1	
87-5	34541	1,2-Dichloropropane	ND	1	
0061-02-6	34699	t-1,3-Dichloropropene	ND	1	
9-01-6	39180	Trichloroethylene	ND	1	
4-48-1	32105	Dibromochloromethane	ND	1	
061-01-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	1	
00-5	34511	1,1,2-Trichloroethane	ND	1	
43-2	34030	Benzene	ND	1	
10-75-8	34576	2-Chloroethylvinyl ether	ND	4	
5-25-2	32104	Bromoform	ND	1	
7-18-4	34475	Tetrachloroethylene	ND	1	
34-5	34516	1,1,2,2-Tetrachloroethane	ND	1	
08-88-3	34010	Toluene	ND	1	
08-90-7	34301	Chlorobenzene	ND	1	
00-41-4	34371	Ethylbenzene	ND	1	
07-02-8	34210	Acrolein	ND	30	
07-13-1	34215	Acrylonitrile	ND	30	
		Dichlorobenzene isomers	ND	2	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1	
7-64-1	81552	Acetone	ND	40	
5-15-0	77041	Carbon Disulfide	ND	3	
		(con't)			

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS -SOIL

SAMPLE NO.: 80823

Sample Results Continued:

trip blank

CAS NO.	STORET NO.	Compound	Conc. (ug/gm)	Det. Limit (ug/gm)	Comments
93-3	81595	2-Butanone (MEK)	ND	100	
8-05-4	77057	Vinyl Acetate	ND	10	
1-10-6	77103	2-Hexanone	ND	1	
8-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	3	
0-42-5	81708	Styrene	ND	1	
8-02-7	81551	Xylenes (total)	ND	2	
		1,2-Dibromoethane	ND	1	
		Tetrahydrofuran	ND	10	
		Ethyl ether	ND	3	

Other Compounds
Tentatively Identified

Other Compounds Quantitated

Sample Recoveries for surrogate Compounds:	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	122	70-133
Toluene, d8	107	88-98
1,4-Bromofluorobenzene	92	80-107

es:

ND=none detected

=approximate

<=less than

>=greater than

FACILITY SAMPLED: Harco Properties

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 80824

SAMPLE LOCATION:

PERCENT DRY WEIGHT: 67%

INSTRUMENT: INCOS-50

DATE OF ANALYSIS: 10/9/90

REFERENCE BOOK: 112

PRESERVATIVE: Cool to 4°C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Det. Limit (ug/gm)	Comments

TARGET COMPOUNDS					
4-87-3	34418	Chloromethane	ND	13.20	
83-9	34413	Bromomethane	ND	6.60	
01-4	39175	Vinyl Chloride	ND	6.60	
5-00-3	34311	Chloroethane	ND	6.60	
5-09-2	34423	Methylene Chloride	21	6.60	
69-4	34488	Trichlorofluoromethane	64	6.60	
35-4	34501	1,1-Dichloroethylene	ND	6.60	
5-34-3	34496	1,1-Dichloroethane	ND	6.60	
56-60-5	34546	1,2-Dichloroethylene isomers	ND	6.60	
-3	32106	Chloroform	ND	6.60	
6-2	34531	1,2-Dichloroethane	ND	6.60	
1-55-6	34506	1,1,1-Trichloroethane	ND	6.60	
23-5	32102	Carbon Tetrachloride	ND	6.60	
27-4	32101	Bromodichloromethane	ND	6.60	
8-87-5	34541	1,2-Dichloropropane	ND	6.60	
0061-02-6	34699	t-1,3-Dichloropropene	ND	6.60	
01-6	39180	Trichloroethylene	ND	6.60	
4-48-1	32105	Dibromochloromethane	ND	6.60	
0061-01-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	6.60	
00-5	34511	1,1,2-Trichloroethane	ND	6.60	
43-2	34030	Benzene	ND	6.60	
10-75-8	34576	2-Chloroethylvinyl ether	ND	26.40	
25-2	32104	Bromoform	ND	6.60	
7-18-4	34475	Tetrachloroethylene	ND	6.60	
9-34-5	34516	1,1,2,2-Tetrachloroethane	ND	6.60	
08-88-3	34010	Toluene	21	6.60	
8-90-7	34301	Chlorobenzene	ND	6.60	
00-41-4	34371	Ethylbenzene	ND	6.60	
07-02-8	34210	Acrolein	ND	198.00	
07-13-1	34215	Acrylonitrile	ND	198.00	
		Dichlorobenzene isomers	ND	13.20	
		1,1,2-Trichloro-1,2,2-trifluoroethane	42	6.60	
7-64-1	81552	Acetone	ND	264.00	
5-15-0	77041	Carbon Disulfide (con't)	ND	19.80	

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS -SOI

SAMPLE NO.: 80824
Sample Results Continued:

Drum

Drum

CAS NO.	STORET NO.	Compound	Conc. (ug/gm)	Det. Limit (ug/gm)	Comments
93-3	81595	2-Butanone (MEK)		1320.00	
8-05-4	77057	Vinyl Acetate	ND	66.00	
1-10-6	77103	2-Hexanone	ND	6.60	
8-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	19.80	
0-42-5	81708	Styrene	ND	6.60	
3-02-7	81551	Xylenes (total)	340	13.20	
		1,2-Dibromoethane	ND	6.60	
		Tetrahydrofuran	ND	66.00	
		Ethyl ether	17	39.60	

Other Compounds
Quantitated

1,3,5 - Trimethylbenzene	13	6.60
Para-Isopropyltoluene	9.4	6.60

Sample Recoveries for
Surrogate Compounds:

	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	110	70-133
Toluene, d8	101	88-98
1,4-Bromofluorobenzene	104	80-107
Fluorobenzene	76	67-130

Notes:

ND=none detected
~=approximate
<=less than
>=greater than

FACILITY SAMPLED: Harco Properties

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 80825

SAMPLE LOCATION:

PERCENT DRY WEIGHT: 74%

INSTRUMENT: INCOS-50

DATE OF ANALYSIS: 10/9/90

REFERENCE BOOK: 112

PRESERVATIVE: Cool to 4 C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Det. Limit (ug/gm)	Comments

TARGET COMPOUNDS					
4-87-3	34418	Chloromethane	ND	0.30	
4-83-9	34413	Bromomethane	ND	0.15	
4-01-4	39175	Vinyl Chloride	ND	0.15	
5-00-3	34311	Chloroethane	ND	0.15	
5-09-2	34423	Methylene Chloride	0.58	0.15	
5-69-4	34488	Trichlorofluoromethane	ND	0.15	
5-35-4	34501	1,1-Dichloroethylene	ND	0.15	
5-34-3	34496	1,1-Dichloroethane	ND	0.15	
5-66-60-5	34546	1,2-Dichloroethylene isomers	ND	0.15	
5-06-2	32106	Chloroform	ND	0.15	
5-1-55-6	34531	1,2-Dichloroethane	ND	0.15	
5-23-5	34506	1,1,1-Trichloroethane	ND	0.15	
5-27-4	32102	Carbon Tetrachloride	ND	0.15	
8-87-5	32101	Bromodichloromethane	ND	0.15	
0061-02-6	34541	1,2-Dichloropropane	ND	0.15	
9-01-6	34699	t-1,3-Dichloropropene	ND	0.15	
24-48-1	39180	Trichloroethylene	ND	0.15	
0061-01-5	32105	Dibromochloromethane	ND	0.15	
9-00-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	0.15	
1-43-2	34511	1,1,2-Trichloroethane	ND	0.15	
10-75-8	34030	Benzene	ND	0.15	
5-25-2	34576	2-Chloroethylvinyl ether	ND	0.60	
27-18-4	32104	Bromoform	ND	0.15	
9-34-5	34475	Tetrachloroethylene	ND	0.15	
08-88-3	34516	1,1,2,2-Tetrachloroethane	ND	0.15	
08-90-7	34010	Toluene	ND	0.15	
00-41-4	34301	Chlorobenzene	ND	0.15	
07-02-8	34371	Ethylbenzene	ND	0.15	
07-13-1	34210	Acrolein	ND	4.50	
	34215	Acrylonitrile	ND	4.50	
		Dichlorobenzene isomers	ND	0.30	
		1,1,2-Trichloro-1,2,2-trifluoroethane	0.84	0.15	
7-64-1	81552	Acetone	ND	6.00	
5-15-0	77041	Carbon Disulfide (con't)	ND	0.45	

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS -SOIL

AMPLE NO.: 80825

Sample Results Continued:

SKA 3 Road

CAS NO.	STORET NO.	Compound	Conc. (ug/gm)	Det. Limit (ug/gm)	Comments
93-3	81595	2-Butanone (MEK)	ND	30.00	
08-05-4	77057	Vinyl Acetate	ND	1.50	
91-10-6	77103	2-Hexanone	ND	0.15	
8-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	0.45	
0-42-5	81708	Styrene	ND	0.15	
33-02-7	81551	Xylenes (total)	ND	0.30	
		1,2-Dibromoethane	ND	0.15	
		Tetrahydrofuran	ND	1.50	
		Ethyl ether	ND	0.90	

Other Compounds
Tentatively Identified

Other Compounds Quantitated

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	106	70-133
Toluene, d8	115	88-98
1,4-Bromofluorobenzene	106	80-107
Fluorobenzene	69	67-130

Notes:

ND=none detected
~≈approximate
<=less than
>=greater than

FACILITY SAMPLED: Harco Properties

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 80826
 SAMPLE LOCATION:
 PERCENT DRY WEIGHT: 75%
 INSTRUMENT: INCOS-50

DATE OF ANALYSIS: 10/9/98
 REFERENCE BOOK: 112
 PRESERVATIVE: Cool to 4°C

4
off road

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Det. Limit (ug/gm)	Comments
TARGET COMPOUNDS					
4-87-3	34418	Chloromethane	ND	0.32	
4-83-9	34413	Bromomethane	ND	0.16	
-01-4	39175	Vinyl Chloride	ND	0.16	
-00-3	34311	Chloroethane	0.18	0.16	
5-09-2	34423	Methylene Chloride	0.38	0.16	
5-69-4	34488	Trichlorofluoromethane	0.25	0.16	
-35-4	34501	1,1-Dichloroethylene	0.28	0.16	
-34-3	34496	1,1-Dichloroethane	ND	0.16	
56-60-5	34546	1,2-Dichloroethylene isomers	ND	0.16	
7-66-3	32106	Chloroform	ND	0.16	
6-6-2	34531	1,2-Dichloroethane	ND	0.16	
1-5-6	34506	1,1,1-Trichloroethane	ND	0.16	
6-23-5	32102	Carbon Tetrachloride	ND	0.16	
-27-4	32101	Bromodichloromethane	ND	0.16	
-87-5	34541	1,2-Dichloropropane	ND	0.16	
0061-02-6	34699	t-1,3-Dichloropropene	ND	0.16	
9-01-6	39180	Trichloroethylene	ND	0.16	
24-48-1	32105	Dibromochloromethane	ND	0.16	
0061-01-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	0.16	
9-00-5	34511	1,1,2-Trichloroethane	ND	0.16	
1-43-2	34030	Benzene	ND	0.16	
10-75-8	34576	2-Chloroethylvinyl ether	ND	0.64	
5-25-2	32104	Bromoform	ND	0.16	
27-18-4	34475	Tetrachloroethylene	ND	0.16	
9-34-5	34516	1,1,2,2-Tetrachloroethane	ND	0.16	
08-88-3	34010	Toluene	ND	0.16	
08-90-7	34301	Chlorobenzene	ND	0.16	
00-41-4	34371	Ethylbenzene	ND	0.16	
07-02-8	34210	Acrolein	ND	4.80	
07-13-1	34215	Acrylonitrile	ND	4.80	
		Dichlorobenzene isomers	ND	0.32	
		1,1,2-Trichloro-1,2,2-trifluoroethane	0.40	0.16	
57-64-1	81552	Acetone	ND	6.40	
5-15-0	77041	Carbon Disulfide	ND	0.48	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS -SOIL

SAMPLE NO.: 80826

Sample Results Continued:

5/4 4 off 600

CAS NO.	STORET NO.	Compound	Conc. (ug/gm)	Det. Limit (ug/gm)	Comments
8-93-3	81595	2-Butanone (MEK)	ND	32.00	
08-05-4	77057	Vinyl Acetate	ND	1.60	
91-10-6	77103	2-Hexanone	ND	0.16	
08-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	0.48	
00-42-5	81708	Styrene	ND	0.16	
33-02-7	81551	Xylenes (total)	ND	0.32	
		1,2-Dibromoethane	ND	0.16	
		Tetrahydrofuran	ND	1.60	
		Ethyl ether	1.2	0.96	

Other Compounds
Tentatively Identified

Other Compounds Quantitated

Sample Recoveries for
Surrogate Compounds:

	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	109	70-133
Toluene, d8	102	88-98
1,4-Bromofluorobenzene	94	80-107
Fluorobenzene	69	67-130

Notes:

ND=none detected
~=approximate
<=less than
>=greater than

FACILITY SAMPLED: Harco Properties

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 80827
 SAMPLE LOCATION:
 PERCENT DRY WEIGHT: 59%
 INSTRUMENT: INCOS-50

DATE OF ANALYSIS: 10/9/90
 REFERENCE BOOK: 112
 PRESERVATIVE: Cool to 4 C

5th off site

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Det. Limit (ug/gm)	Comments

TARGET COMPOUNDS					
4-87-3	34418	Chloromethane	ND	0.40	
4-83-9	34413	Bromomethane	ND	0.20	
5-01-4	39175	Vinyl Chloride	ND	0.20	
5-00-3	34311	Chloroethane	ND	0.20	
5-09-2	34423	Methylene Chloride	0.4	0.20	
5-69-4	34488	Trichlorofluoromethane	2.0	0.20	
5-35-4	34501	1,1-Dichloroethylene	ND	0.20	
5-34-3	34496	1,1-Dichloroethane	ND	0.20	
56-60-5	34546	1,2-Dichloroethylene isomers	ND	0.20	
7-66-3	32106	Chloroform	ND	0.20	
7-66-2	34531	1,2-Dichloroethane	ND	0.20	
7-66-6	34506	1,1,1-Trichloroethane	ND	0.20	
6-23-5	32102	Carbon Tetrachloride	ND	0.20	
5-27-4	32101	Bromodichloromethane	ND	0.20	
5-87-5	34541	1,2-Dichloropropane	ND	0.20	
5-061-02-6	34699	t-1,3-Dichloropropene	ND	0.20	
5-9-01-6	39180	Trichloroethylene	ND	0.20	
5-4-48-1	32105	Dibromochloromethane	ND	0.20	
5-061-01-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	0.20	
5-9-00-5	34511	1,1,2-Trichloroethane	ND	0.20	
5-43-2	34030	Benzene	ND	0.20	
5-10-75-8	34576	2-Chloroethylvinyl ether	ND	0.80	
5-5-25-2	32104	Bromoform	ND	0.20	
5-27-18-4	34475	Tetrachloroethylene	ND	0.20	
5-9-34-5	34516	1,1,2,2-Tetrachloroethane	ND	0.20	
5-08-88-3	34010	Toluene	ND	0.20	
5-08-90-7	34301	Chlorobenzene	ND	0.20	
5-00-41-4	34371	Ethylbenzene	ND	0.20	
5-07-02-8	34210	Acrolein	ND	6.00	
5-07-13-1	34215	Acrylonitrile	ND	6.00	
		Dichlorobenzene isomers	ND	0.40	
		1,1,2-Trichloro-1,2,2-trifluoroethane	1.3	0.20	
5-7-64-1	81552	Acetone	ND	8.00	
5-5-15-0	77041	Carbon Disulfide	ND	0.60	
		(con't)			

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS -SOIL

SAMPLE NO.: 80827

Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (ug/gm)	Det. Limit (ug/gm)	Comments
8-93-3	81595	2-Butanone (MEK)	ND	40.00	
08-05-4	77057	Vinyl Acetate	ND	2.00	
91-10-6	77103	2-Hexanone	ND	0.20	
08-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	0.60	
00-42-5	81708	Styrene	ND	0.20	
83-02-7	81551	Xylenes (total)	ND	0.40	
		1,2-Dibromoethane	ND	0.20	
		Tetrahydrofuran	ND	2.00	
		Ethyl ether	ND	1.20	

Other Compounds
Tentatively Identified

Other Compounds Quantitated

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	101	70-133
Toluene, d8	107	88-98
1,4-Bromofluorobenzene	93	80-107
Fluorobenzene	74	67-130

Notes:

ND=none detected
~=approximate
<=less than
>=greater than

FACILITY SAMPLED: Harco Properties

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 80828

SAMPLE LOCATION:

PERCENT DRY WEIGHT: 80%

INSTRUMENT: INCOS-50

DATE OF ANALYSIS: 10/9/90

REFERENCE BOOK: 112

PRESERVATIVE: Cool to 4°C

SAMPLE RESULTS:

*STA 6
Road
High lead*

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Det. Limit (ug/gm)	Comments

TARGET COMPOUNDS					
4-87-3	34418	Chloromethane	ND	0.32	
4-83-9	34413	Bromomethane	ND	0.16	
5-01-4	39175	Vinyl Chloride	ND	0.16	
5-00-3	34311	Chloroethane	ND	0.16	
5-09-2	34423	Methylene Chloride	30	0.16	
5-69-4	34488	Trichlorofluoromethane	ND	0.16	
5-35-4	34501	1,1-Dichloroethylene	ND	0.16	
5-34-3	34496	1,1-Dichloroethane	ND	0.16	
56-60-5	34546	1,2-Dichloroethylene isomers	ND	0.16	
7-66-3	32106	Chloroform	ND	0.16	
07-76-2	34531	1,2-Dichloroethane	ND	0.16	
1-3-6	34506	1,1,1-Trichloroethane	ND	0.16	
6-23-5	32102	Carbon Tetrachloride	ND	0.16	
5-27-4	32101	Bromodichloromethane	ND	0.16	
8-87-5	34541	1,2-Dichloropropane	ND	0.16	
0061-02-6	34699	t-1,3-Dichloropropene	ND	0.16	
9-01-6	39180	Trichloroethylene	ND	0.16	
24-48-1	32105	Dibromochloromethane	ND	0.16	
0061-01-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	0.16	
9-00-5	34511	1,1,2-Trichloroethane	ND	0.16	
1-43-2	34030	Benzene	ND	0.16	
10-75-8	34576	2-Chloroethylvinyl ether	ND	0.64	
5-25-2	32104	Bromoform	ND	0.16	
27-18-4	34475	Tetrachloroethylene	ND	0.16	
9-34-5	34516	1,1,2,2-Tetrachloroethane	ND	0.16	
08-88-3	34010	Toluene	ND	0.16	
08-90-7	34301	Chlorobenzene	ND	0.16	
00-41-4	34371	Ethylbenzene	ND	0.16	
07-02-8	34210	Acrolein	ND	4.80	
07-13-1	34215	Acrylonitrile	ND	4.80	
		Dichlorobenzene isomers	ND	0.32	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.16	
57-64-1	81552	Acetone	ND	6.40	
5-15-0	77041	Carbon Disulfide	ND	0.48	
		(con't)			

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS -SOIL

SAMPLE NO.: 80828

Sample Results Continued:

GA Road High Level

CAS NO.	STORET NO.	Compound	Conc. (ug/gm)	Det. Limit (ug/gm)	Comments
-93-3	81595	2-Butanone (MEK)	ND	32.00	
8-05-4	77057	Vinyl Acetate	ND	1.60	
91-10-6	77103	2-Hexanone	ND	0.16	
08-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	0.48	
0-42-5	81708	Styrene	ND	0.16	
3-02-7	81551	Xylenes (total)	ND	0.32	
		1,2-Dibromoethane	ND	0.16	
		Tetrahydrofuran	ND	1.60	
		Ethyl ether	ND	0.96	

Other Compounds
Tentatively Identified

Other Compounds Quantitated

Sample Recoveries for
Surrogate Compounds:

	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	109	70-133
Toluene, d8	99	88-98
1,4-Bromofluorobenzene	104	80-107
Fluorobenzene	86	67-130

Notes:

ND=none detected
~=approximate
<=less than
>=greater than

FACILITY SAMPLED: Harco Properties

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 80829

SAMPLE LOCATION:

PERCENT DRY WEIGHT: 88%

INSTRUMENT: INCOS-50

DATE OF ANALYSIS: 10/9/90

REFERENCE BOOK: 112

PRESERVATIVE: Cool to 4°C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Det. Limit (ug/gm)	Comments

TARGET COMPOUNDS					
4-87-3	34418	Chloromethane	ND	0.28	
4-83-9	34413	Bromomethane	ND	0.14	
1-01-4	39175	Vinyl Chloride	ND	0.14	
1-00-3	34311	Chloroethane	ND	0.14	
5-09-2	34423	Methylene Chloride	0.50	0.14	
5-69-4	34488	Trichlorofluoromethane	ND	0.14	
1-35-4	34501	1,1-Dichloroethylene	ND	0.14	
1-34-3	34496	1,1-Dichloroethane	ND	0.14	
56-60-5	34546	1,2-Dichloroethylene isomers	ND	0.14	
7-66-3	32106	Chloroform	ND	0.14	
1-06-2	34531	1,2-Dichloroethane	ND	0.14	
1-05-6	34506	1,1,1-Trichloroethane	ND	0.14	
6-23-5	32102	Carbon Tetrachloride	ND	0.14	
5-27-4	32101	Bromodichloromethane	ND	0.14	
1-87-5	34541	1,2-Dichloropropane	ND	0.14	
0061-02-6	34699	t-1,3-Dichloropropene	ND	0.14	
9-01-6	39180	Trichloroethylene	ND	0.14	
24-48-1	32105	Dibromochloromethane	ND	0.14	
0061-01-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	0.14	
9-00-5	34511	1,1,2-Trichloroethane	ND	0.14	
1-43-2	34030	Benzene	ND	0.14	
10-75-8	34576	2-Chloroethylvinyl ether	ND	0.56	
5-25-2	32104	Bromoform	ND	0.14	
27-18-4	34475	Tetrachloroethylene	ND	0.14	
9-34-5	34516	1,1,2,2-Tetrachloroethane	ND	0.14	
08-88-3	34010	Toluene	ND	0.14	
08-90-7	34301	Chlorobenzene	ND	0.14	
00-41-4	34371	Ethylbenzene	ND	0.14	
07-02-8	34210	Acrolein	ND	4.20	
07-13-1	34215	Acrylonitrile	ND	4.20	
		Dichlorobenzene isomers	ND	0.28	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.14	
7-64-1	81552	Acetone	ND	5.60	
5-15-0	77041	Carbon Disulfide	ND	0.42	
		(con't)			

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS -SOIL

AMPLE NO.: 80829
Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (ug/gm)	Det. Limit (ug/gm)	Comments
-93-3	81595	2-Butanone (MEK)	ND	28.00	
08-05-4	77057	Vinyl Acetate	ND	1.40	
91-10-6	77103	2-Hexanone	ND	0.14	
8-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	0.42	
0-42-5	81708	Styrene	ND	0.14	
33-02-7	81551	Xylenes (total)	ND	0.28	
		1,2-Dibromoethane	ND	0.14	
		Tetrahydrofuran	ND	1.40	
		Ethyl ether	ND	0.84	

Other Compounds
Tentatively Identified

Other Compounds Quantitated

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	113	70-133
Toluene, d8	87	88-98
1,4-Bromofluorobenzene	52	80-107
Fluorobenzene	125	67-130

Notes:
ND=none detected
~=approximate
<=less than
>=greater than

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA. 02173

DATE: 11/26/90

SUBJECT: Harco Properties - Purgeable Organic Analysis
Samples Received: 80830, 80963, 80823 Trip Blank
Samples Analyzed by GC/MS: Same

FROM: Steven Heller *S.H.* ESAT Chemist, Joe Montanaro, *JM* EPA Chemist

TO: Mary Ellen Stanton, EEE

THRU: Dr. William Andrade *Dr. W. Andrade*
Chief, Chemistry Section

PROJECT NUMBER: 900245

DATE(S) SAMPLES RECEIVED BY THE LABORATORY: 9/26/90

ANALYTICAL PROCEDURE:

Method 8240 SW-846 equivalent to
Federal Register, Volume 49, #209, Oct. 26, 1984, Method 624.

QUALITY CONTROL:

1. A laboratory blank was analyzed prior to sample analysis.
2. Each sample was spiked with three surrogate compounds at approximately 30 ppb concentration. The results for the surrogate recoveries are reported for each sample.

NOTE: A spike duplicate was not run accidentally.

DATA FILE: D:\LABRPTS\900245WA.VOA

cc: Mary Jane Cuzzupe, Scott Clifford

ANALYTICAL PARAMETERS
PURGEABLE ORGANIC ANALYSIS

INSTRUMENTS:

Tekmar ALS
Tekmar LSC-2
Finnigan INCOS-50

PURGE CONDITIONS:

Gas: Helium
Purge Time and Flow: 11 min., 40 ml/min
Trap: 25 cm stainless steel
(1/8 in. OD) packed with
15 cm 60/80 mesh Tenax-
GC plus 8 cm 35/80 mesh
Davison type 15 Silica
Gel
Desorption Time, Flow, Temperature: 4 min, 20ml/min., 180C
Bake out cycle: 10 min.

CHROMATOGRAPHIC CONDITIONS:

Column: 30 meter long x 0.5 mm ID
DB 624 mega-bore column
Program: Initial 5 C ramped at 2 C/min
to 10 C. Hold at 10 C for
5 minutes, then programmed
at 6 C/min to 160 C and held
for 1 minute.
Injector, Separator, and
Transfer Temperatures: 220 C, 220 C, 220 C
Carrier Gas and Flow: Helium, 30 ml/min

MASS SPECTROMETER CONDITIONS:

Electron Energy: 70 V
Mass Range: 35,300
Scan Rate: 1.5 seconds

FACILITY SAMPLED: Harco Properties
 US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - WATER

SAMPLE NO.: 80830
 SAMPLE LOCATION:
 DATE OF COLLECTION:
 INSTRUMENT: INCOS-50

DATE OF ANALYSIS: 10/5/90
 REFERENCE BOOK: 98
 PRESERVATIVE: Cool to 4°C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/L)	Det. Limit (ug/L)	Comments
TARGET COMPOUNDS					
4-87-3	34418	Chloromethane	ND	2	
4-83-9	34413	Bromomethane	ND	1	
5-01-4	39175	Vinyl Chloride	ND	1	
5-00-3	34311	Chloroethane	ND	1	
5-09-2	34423	Methylene Chloride	ND	2	
5-69-4	34488	Trichlorofluoromethane	ND	1	
5-35-4	34501	1,1-Dichloroethylene	ND	1	
5-34-3	34496	1,1-Dichloroethane	ND	1	
56-60-5	34546	1,2-Dichloroethylene isomers	ND	1	
7-66-3	32106	Chloroform	ND	1	
7-66-2	34531	1,2-Dichloroethane	ND	1	
1-35-6	34506	1,1,1-Trichloroethane	ND	1	
56-23-5	32102	Carbon Tetrachloride	ND	1	
5-27-4	32101	Bromodichloromethane	ND	1	
8-87-5	34541	1,2-Dichloropropane	ND	1	
0061-02-6	34699	t-1,3-Dichloropropene	ND	1	
9-01-6	39180	Trichloroethylene	ND	1	
24-48-1	32105	Dibromochloromethane	ND	1	
0061-01-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	1	
9-00-5	34511	1,1,2-Trichloroethane	ND	1	
1-43-2	34030	Benzene	ND	1	
10-75-8	34576	2-Chloroethylvinyl ether	ND	4	
5-25-2	32104	Bromoform	ND	1	
27-18-4	34475	Tetrachloroethylene	ND	1	
9-34-5	34516	1,1,2,2-Tetrachloroethane	ND	1	
08-88-3	34010	Toluene	ND	1	
08-90-7	34301	Chlorobenzene	ND	1	
00-41-4	34371	Ethylbenzene	ND	1	
07-02-8	34210	Acrolein	ND	30	
107-13-1	34215	Acrylonitrile	ND	30	
		Dichlorobenzene isomers	ND	2	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1	
57-64-1	81552	Acetone	ND	40	
5-15-0	77041	Carbon Disulfide (con't)	ND	3	

US ENVIRONMENTAL PROTECTION AGENCY
REGION 1 LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - WATER

SAMPLE NO.: 80830

Sample Results Continued

CAS NO.	STORET NO.	Compound	Conc. (ug/L)	Det. Limit (ug/L)	Comments
-93-3	81595	2-Butanone (MEK)	ND	100	
08-05-4	77057	Vinyl Acetate	ND	10	
01-10-6	77103	2-Hexanone	ND	1	
08-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	1	
00-42-5	81708	Styrene	ND	1	
33-02-7	81551	Xylenes (total)	ND	2	
		1,2-Dibromoethane	ND	1	
		Tetrahydrofuran	ND	10	
		Ethyl ether	ND	2	

Other Compounds
Tentatively Identified

Other Compounds Quantitated

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	95	77-117
Toluene, d8	114	89-109
1,4-Bromofluorobenzene	122	89-113

Notes:

ND=none detected
~=approximate
<=less than
>=greater than

FACILITY SAMPLED: Harco Properties

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS PURGEABLE ORGANIC ANALYSIS - WATER

SAMPLE NO.: 80963

SAMPLE LOCATION:

DATE OF COLLECTION:

INSTRUMENT: INCOS-50

DATE OF ANALYSIS: 10/5/90

REFERENCE BOOK: 98

PRESERVATIVE: Cool to 4 C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/L)	Det. Limit (ug/L)	Comments
----- TARGET COMPOUNDS -----					
4-87-3	34418	Chloromethane	ND	2	
4-83-9	34413	Bromomethane	ND	1	
3-01-4	39175	Vinyl Chloride	ND	1	
3-00-3	34311	Chloroethane	ND	1	
5-09-2	34423	Methylene Chloride	ND	2	
5-69-4	34488	Trichlorofluoromethane	ND	1	
5-35-4	34501	1,1-Dichloroethylene	ND	1	
5-34-3	34496	1,1-Dichloroethane	ND	1	
56-60-5	34546	1,2-Dichloroethylene isomers	ND	1	
7- -3	32106	Chloroform	ND	1	
7- 6-2	34531	1,2-Dichloroethane	ND	1	
1-55-6	34506	1,1,1-Trichloroethane	ND	1	
6-23-5	32102	Carbon Tetrachloride	ND	1	
6-27-4	32101	Bromodichloromethane	ND	1	
8-87-5	34541	1,2-Dichloropropane	ND	1	
0061-02-6	34699	t-1,3-Dichloropropene	ND	1	
9-01-6	39180	Trichloroethylene	ND	1	
24-48-1	32105	Dibromochloromethane	ND	1	
0061-01-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	1	
9-00-5	34511	1,1,2-Trichloroethane	ND	1	
1-43-2	34030	Benzene	ND	1	
10-75-8	34576	2-Chloroethylvinyl ether	ND	4	
5-25-2	32104	Bromoform	ND	1	
27-18-4	34475	Tetrachloroethylene	ND	1	
9-34-5	34516	1,1,2,2-Tetrachloroethane	ND	1	
08-88-3	34010	Toluene	ND	1	
08-90-7	34301	Chlorobenzene	ND	1	
00-41-4	34371	Ethylbenzene	ND	1	
07-02-8	34210	Acrolein	ND	30	
07-13-1	34215	Acrylonitrile	ND	30	
		Dichlorobenzene isomers	ND	2	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1	
7-64-1	81552	Acetone	ND	40	
5-15-0	77041	Carbon Disulfide	ND	3	
		(con't)			

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - WATER

SAMPLE NO.: 80963
Sample Results Continued:

9 shown

CAS NO.	STORET NO.	Compound	Conc. (ug/L)	Det. Limit (ug/L)	Comments
-93-3	81595	2-Butanone (MEK)	ND	100	
8-05-4	77057	Vinyl Acetate	ND	10	
91-10-6	77103	2-Hexanone	ND	1	
08-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	3	
00-42-5	81708	Styrene	ND	1	
33-02-7	81551	Xylenes (total)	ND	2	
		1,2-Dibromoethane	ND	1	
		Tetrahydrofuran	ND	10	
		Ethyl ether	ND	3	

Other Compounds
Tentatively Identified

Other Compounds Quantitated

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	96	77-117
Toluene, d8	111	89-109
1,4-Bromofluorobenzene	118	89-113

Notes:

ND=none detected
~=approximate
<=less than
>=greater than

FACILITY SAMPLED: Harco Properties

US ENVIRONMENTAL PROTECTION AGENCY

REGION I LABORATORY

GC/MS PURGEABLE ORGANIC ANALYSIS - WATER

SAMPLE NO.: 80823 - Trip Blank

SAMPLE LOCATION:

DATE OF COLLECTION:

INSTRUMENT: INCOS-50

DATE OF ANALYSIS: 10/3/90

REFERENCE BOOK: 98

PRESERVATIVE: Cool to -10°C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/L)	Det. Limit (ug/L)	Comments
----- TARGET COMPOUNDS -----					
4-87-3	34418	Chloromethane	ND	2	
4-83-9	34413	Bromomethane	ND	1	
1-01-4	39175	Vinyl Chloride	ND	1	
3-00-3	34311	Chloroethane	ND	1	
5-09-2	34423	Methylene Chloride	ND	2	
1-69-4	34488	Trichlorofluoromethane	ND	1	
1-35-4	34501	1,1-Dichloroethylene	ND	1	
5-34-3	34496	1,1-Dichloroethane	ND	1	
56-60-5	34546	1,2-Dichloroethylene isomers	ND	1	
1-16-3	32106	Chloroform	ND	1	
1-16-2	34531	1,2-Dichloroethane	ND	1	
1-55-6	34506	1,1,1-Trichloroethane	ND	1	
1-6-23-5	32102	Carbon Tetrachloride	ND	1	
1-5-27-4	32101	Bromodichloromethane	ND	1	
1-8-87-5	34541	1,2-Dichloropropane	ND	1	
1-0061-02-6	34699	t-1,3-Dichloropropene	ND	1	
1-9-01-6	39180	Trichloroethylene	ND	1	
1-24-48-1	32105	Dibromochloromethane	ND	1	
1-0061-01-5	34704	c-1,3-Dichloropropene and/or 1,1-Dichloropropene	ND	1	
1-9-00-5	34511	1,1,2-Trichloroethane	ND	1	
1-1-43-2	34030	Benzene	ND	1	
1-10-75-8	34576	2-Chloroethylvinyl ether	ND	4	
1-5-25-2	32104	Bromoform	ND	1	
1-27-18-4	34475	Tetrachloroethylene	ND	1	
1-9-34-5	34516	1,1,2,2-Tetrachloroethane	ND	1	
1-108-88-3	34010	Toluene	ND	1	
1-108-90-7	34301	Chlorobenzene	ND	1	
1-100-41-4	34371	Ethylbenzene	ND	1	
1-107-02-8	34210	Acrolein	ND	30	
1-107-13-1	34215	Acrylonitrile	ND	30	
		Dichlorobenzene isomers	ND	2	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1	
1-57-64-1	81552	Acetone	ND	40	
1-5-15-0	77041	Carbon Disulfide (con't)	ND	3	

US ENVIRONMENTAL PROTECTION AGENCY
REGION 1 LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - WATER

SAMPLE NO.: 80823 - Trip Blank
Sample Results Continued:

CAS NO.	STORET NO.	Compound	Conc. (ug/L)	Det. Limit (ug/L)	Comments
-93-3	81595	2-Butanone (MEK)	ND	100	
08-05-4	77057	Vinyl Acetate	ND	10	
01-10-6	77103	2-Hexanone	ND	1	
8-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	3	
00-42-5	81708	Styrene	ND	1	
33-02-7	81551	Xylenes (total)	ND	2	
		1,2-Dibromoethane	ND	1	
		Tetrahydrofuran	ND	10	
		Ethyl ether	ND	3	

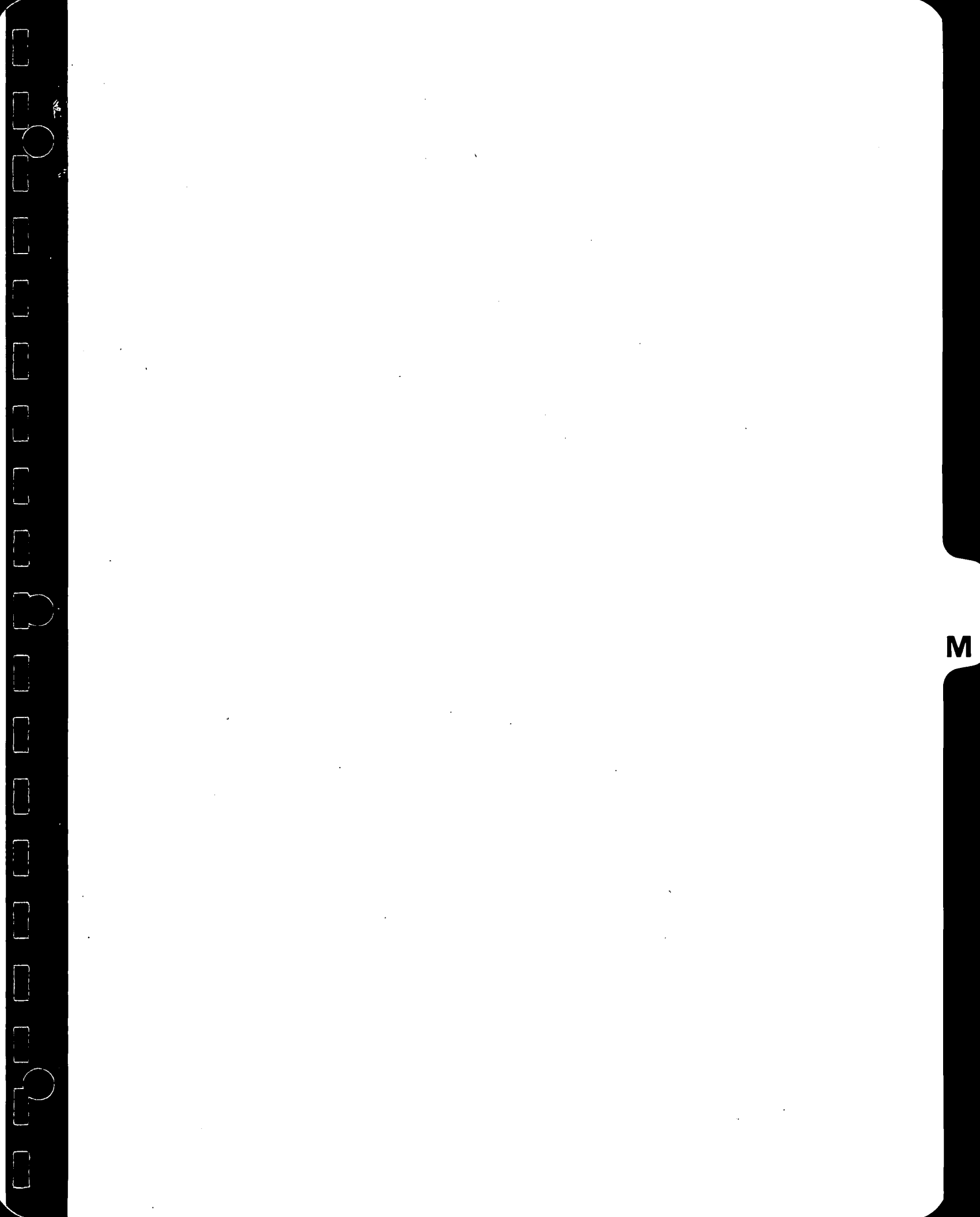
Other Compounds
Tentatively Identified

Other Compounds Quantitated

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	95% Confidence Limits
1,2-Dichloroethane, d4	97	77-117
Toluene, d8	107	89-109
1,4-Bromofluorobenzene	122	89-113

Notes:

ND=none detected
~=approximate
<=less than
>=greater than



M

APPENDIX M

NERL ANALYTICAL REPORT ON JANUARY 1992 SAMPLES

CHAIN OF CUSTODY RECORD

[illegible]

D. Lister

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173

MEMORANDUM

PN: 92064

DATE: April 27, 1992

SUBJ: Harco Property

FROM: Michael Dowling and Elio Goffi
Chemists

TO: Paul Groulx
Site Eval. and Resp. Sec. I

THRU: Dr. William J. Andrade
Chief, Chemistry Section

WJA
5/5/92

Analytical Reference:

Eight samples were submitted for determination of lead. CLP Sample Preparation Method (SOP I-17, 9/91) DCN, CH-001/88 and ICP Method 200.7 CLP-M as stated in "The U.S. EPA Contract Laboratory Program, Document #1LM01.0, 3/90" was followed for the analysis.

Date Samples Received by Laboratory: 1/29/92

Starting Date of Analysis: 3/19/92

File name: 92064SO.ICP

Results (mg/kg)

Average

<u>Sample</u>	<u>Calcium</u>	<u>Iron</u>	<u>Lead</u>	<u>Zinc</u>
01663	108000	184000	2940	21500
01664	81400	133000	3300	20200
01665	41900	262000	6680	30200
01666	7400	47500	2610	13000
01667	6650	101000	1830	13400
01668	683	30800	83.2	64.4
01669	1860	22500	89.5	119
01670	6280	6850	7920	585000

Quality Assurance/Quality Control

Serial Dilution Results - % Difference

<u>Sample</u>	<u>Calcium</u>	<u>Iron</u>	<u>Lead</u>	<u>Zinc</u>
01663	2.6	7.9	2.1	5.3
01663 DUP	2.6	7.9	5.2	7.0
01664	3.4	8.3	2.1	6.1
01664 DUP	2.6	6.6	11	6.4
01665	1.7	5.6	1.0	4.7
01665 DUP	2.4	---	2.1	5.9
01666	2.0	3.3	3.2	2.1
01666 DUP	3.0	2.7	2.2	2.7
01667	1.7	2.0	2.7	2.3
01667 DUP	2.8	4.3	2.2	3.1
01668	2.8	3.7	3.4	5.7
01668 DUP	2.4	4.7	8.1	6.2
01669	1.1	3.2	7.9	2.6
01669 DUP	0.54	2.7	4.7	0.85
01670	6.4	3.3	2.0	0.51

Duplicate Results - Relative % Difference

<u>Sample</u>	<u>Calcium</u>	<u>Iron</u>	<u>Lead</u>	<u>Zinc</u>
01663	19	0.54	1.2	4.4
01664	7.9	13	2.8	13
01665	2.1	0.83	2.7	2.0
01666	1.2	3.2	11	25
01667	1.4	0	3.3	1.5
01668	10	0.98	0.61	0.16
01669	1.1	0.89	2.7	0.84
01670	*Insufficient Amount of Sample Submitted			

Laboratory Control Sample

<u>Iron</u>	<u>Lead</u>	<u>Zinc</u>
94%	94%	111%

Data Quality Statements

- Elio Goffi and Michael Dowling independently reviewed all the data.
- The samples were submitted for lead analysis. In addition, calcium, iron and zinc are reported.

These samples were submitted for ICP analysis which will be used for XRF verification. All samples were room dried overnight (22°C) and then dried (approx. 4 hrs.) in a heated oven (105°) to constant weight.

No pre digestion spike recoveries (MS, MSD) are reported since the concentration for all metals is greater than 1000 ppm.

Post digestion spike recoveries were performed for sample 01664. No post recoveries are reported for iron and zinc since the sample concentration is greater than 4 times the spiking level.

Pb - 99% Ca - 85%

Sample 01670, because of its limited weight, was simply ground by mortar and pestle (acid washed) to a fine powder and the entire sample was used for ICP analysis.

All other samples were ground by mortar and pestle (acid washed) to a fine powder/granular mix. All stones were removed. The dry samples were used for ICP and XRF analysis.

- No contamination problems.
- Instrument performance was excellent.
- No data qualifiers needed.